The Mining Journal

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NOTES AND COMMENTS

Mining in Tanganyika

Tanganyika Territory has been much in the news in recent months, especially in connection with the activities of the Colonial Development Corporation. The returns of mineral exports for last year are therefore of considerable interest. Unfortunately, the figures show a considerable recession from those of 1949 which were, in fact, a record. This may be due in part to increased attention being given to development, but it is impossible to judge this until we get the annual official report from the Mines Division of the Department of Lands and Mines, the latest of which, received not long since, only covered 1948, so that we are two years in arrear with official details.

Total value of exports last year was £1,836,283 as compared with £2,506,241 in 1949. Thus the big increase in the price of many mineral products failed to make up for the deficiencies in actual tonnage. The decline in values was due principally to a big falling-off in the export of diamonds which totalled 70,597 carats, valued at £746,370, as compared with 191,704 carats, valued at £1,652,407. The decline in exports was particularly marked in the later part of the year, but the causes can only be conjectured.

The gold output which totalled 65,127 f.oz., compared with 68,989 f.oz. in the previous year, but not withstanding the fall, gold displaced diamonds as the most important mine product. Nearly half the output was from the Geita mines, with a total of 30,683 f.oz. out of 63,107 oz. from reef mines and alluvial production was only 1,420 oz. Strangely enough, though the silver output is only a by-product from the gold bullion, exports were higher at 31,014 f.oz. against 27,631 f.oz. in 1949.

Third place was secured by lead concentrates which appear on the list for the first time, with a total of 1,093 tons presumably from Mpanda Mine, operated by Uruwira Minerals Ltd. Next in order of value was sheet mica with a production of 111,782 lb. compared with 131,459 lb. in the previous year. Exports of salt increased to a total of 3,936 tons compared with 2,966 tons in the previous year. The bulk of the output is disposed of locally and the total production may have been around 12,000 tons. Most of the output comes from brine springs at Uvinza and Lake Rukwa, but the coastal salt pans also contribute.

Production of tin concentrates declined to 129 tons com-
tungsten concentrates at 40 tons compared with 38½ tons
pared with 153 tons in the preceding year. Exports of
in the previous year.

There were initial shipments of copper ore and magnesite last December amounting to 8¾ and 81 tons respectively, which may have represented sample shipments for testing, as was the case with a small parcel of beryllium ore shipped in 1949 and not repeated. No production of other minerals such as graphite, asbestos, corundum and pyrites, noted in the Government report for 1948 as under examination, has been reported. There has been extensive prospecting and geological work in the Territory, particularly by the Colonial Development Corporation, as regards which the Colonial Secretary stated in Parliament last week that the Corporation is investigating two coalfields in the southern province at Ngaka and Kitewaka. In the first coalfield diamond drilling has indicated the presence of 50,000,000 tons of coal of fair quality, of which some 15,000,000 tons should be workable. In the Kitewaka field, diamond drilling is just commencing. The eventual importance to the territory of the location of economic coal deposits is obvious.

Five-Year Mining Development Programme for Philippines

To speed up reconstruction and development in the Philippine mining industry—which, of all the republic's major industries, has up to now made the slowest recovery from the effects of the last war—the Bureau of Mines has recently produced a five-year development programme. The Bureau's main recommendation, in its report to the Department of Agriculture and Natural Resources, is that 10,000,000 pesos be appropriated for prospecting; this, it may be recalled, was one of the recommendations of the Bell report with regard to mine development. It is expected that new mineral deposits will be opened up, thus making it possible to establish new mines producing such strategic minerals as chromite, manganese, copper and possibly a number of other metals not at present found in commercial quantities, as well as gold. The country is said to be rich in minerals of various kinds, but it will take a good deal

of prospecting to discover rich deposits. In order to speed up the return to production of pre-war mines, the Bureau is understood to have recommended the setting aside of an additional sum of 10,000,000 or 12,000,000 pesos for direct loans to these mines. It is felt that the financial assistance at present being made available for the rehabilitation of the mining industry is not adequate, particularly if the manner in which this aid is being offered is taken into consideration.

The Rehabilitation Finance Corporation has made available some 5,000,000 pesos as initial aid to the industry, and its chairman, Mr. P. L. Mapa, is reported by Reuter to have made it understood that there was no limit in the amount to be given as assistance and that the corporation could increase this amount once the initial sum had been exhausted. However, one of the corporation's conditions in the extension of development loans to the industry, is that the directors or any other stockholders of good standing in the mining corporation should give their personal guarantee. This is thought to be a rather severe condition for the mines now seeking additional government aid.

Experience so far seems to be that several mines, which need additional finance, are not taking advantage of the corporation's assistance. A few mines, especially those producing strategic materials in great demand in the U.S., have taken advantage of these credit facilities and complied with the conditions. The gold mines, however, where finance is as much needed, are finding it difficult to comply with the corporation's terms. One pre-war mine, Baguio Gold Mining Co., which is now well on the road toward resuming operation, has partly solved its financing problem without aid from the Government, by making an arrangement with a machinery firm to install the complete power plant and mill needed to resume production.

Important Rare Earth Deposits Discovered in California

Valuable deposits of rare earth minerals, recently discovered in southern California, may enable the United States to become largely self-sufficient in these elements. According to the Secretary of the Interior, Mr. Oscar L. Chapman, the discovery is of the highest importance, because the country is at present dependent upon foreign sources for its supply.

The new deposits are located in San Bernardino County, near the Mountain Pass service station, 35 miles east of Baker, Cal. A vein of rare earth minerals was originally discovered in this area in 1949 on the so-called Birthday claims, and intensive studies of the area were begun shortly afterwards. These studies indicate that an area roughly six miles long and two miles wide, extending south-east from the original discovery, contains numerous deposits of rare earths, chiefly cerium, lanthanum, neodymium and praseodymium. The chief rare earth mineral in the deposits is bastnaesite, a fluorcarbonate of the cerium earths. Rare earths constitute about 65 per cent of the mineral, and variable quantities of thorium also are present. The bastnaesite is found in veins and bodies of baryte-carbonate rock, associated with the uncommon types of igneous rocks, shonkinite and syenite. Although the size and extent of these deposits are still not known, some of them appear to be very large. Mr. D. Foster Hewett, geologist in charge of the field investigations for the Geological Survey, estimates that a single deposit in the area, if it extends to a depth of 100 ft., may contain about 50,000 tons of rare earth bearing minerals.

Although the rare earth content alone makes this discovery of great importance, baryte is also a valuable constituent of the deposits. If the large baryte-carbonate rock area extends to a depth of 100 ft., it should contain some hundreds of thousands of tons of baryte.

Portuguese Wolfram Position

(From Our Own Correspondent)

Oporto, March 6

Recent developments in the wolfram trade are not readily understood by foreigners. It may, therefore, not be inopportune to point out that the new taxes of £450 per ton of wolfram and £190 per ton of tin ore are not, in fact, export duties. The old scales of export duties are still in force and have not been altered. The new measures are dealt with by the Department of Mines; export licences being issued only after the amount of the tax has been paid into that department.

The political aspect of this tax does not come within the scope of these comments. The commercial aspect has been to cause grave difficulties to exporters having long-term contracts, as in many cases the monthly tonnages contracted for could only be shipped after the issuing of the export licence, which was applied for from month to month. The tax also found many of the speculators holding stocks bought at prices exceeding market figures. For this type of person little sympathy can be felt; in fact, a general clean-up is felt to be necessary. The resulting position is most indefinite as WO_3 ores are on offer at prices ranging from Esc.105.00 to Esc.115.00 per kilo, in warehouse, basis of 65 per cent WO_3, with buyers holding off. At first sight it does not appear likely that the new measure will increase production figures. The result of the talks between representatives of the Portuguese Government and the U.K. Treasury officials in London is now awaited with great interest.

The position is especially difficult for the person who owns concessions and is also an exporter. The Department of Mines levies a yearly tax of two per cent, based on c.i.f. foreign markets, on the total production of each mine. At present-day quotations two per cent is quite a high figure; this, added to the £450 net tax, makes a total of about £500 per ton of wolfram. The position regarding wolfram residues and mixed wolfram tin residues is not yet clear, as no export licences are being issued for this material. Should the embargo be maintained, the U.K. will lose about 100 tons of WO_3 per annum. In view of the scarcity of both WO_3 and tin ores, it is unlikely that the new measure will meet with approval in consuming countries.

CALCULATION OF VALUES

The system used here of calculating values is the following: almost invariably the unit taken is the kilo of 1,000 grams, the basis being 65 per cent of contained WO_3. Thus, the price per kilo means 1,000 grams of concentrates containing 65 per cent (650) grams of metal. Taking the figure of Esc.166 f.o.b. per kilo, the determination of the long ton unit price in shillings is this: a long ton is equal to 1,016 kilos; multiplying 1,016 by 166, we obtain 168,656Esc. per long ton. At the exchange rate of Esc. 80.00 per £1, we obtain £2,108.2. By dividing £2,108.2 by 65, we get a per unit price of £32.42, equal to 648/4.

To a certain extent we have had a reversion to war-time conditions in respect to the activities of the tributer. After the price per unit touched 350s. the casual collector began to take interest, this interest being helped by their knowledge of the places where mineral could be found. So far, there have been no pitched battles, as occurred in war-time, but one never knows. Whatever may be the outcome of the London talks, the whole trade feels that it is incumbent on consuming countries to fix ceiling prices at the earliest opportunity. Leaving such steps to others only results in unsatisfactory measures being put into effect.

Canada

(From Our Own Correspondent)

Winnipeg, February 26

Canadian Johns-Manville Co. will build a completely new mill on the company's Jeffrey Mine in Quebec. This will involve an expenditure estimated at $14,000,000 and will extend over a period of about six years. The Jeffrey Mine is the world's largest producer of asbestos. The date on which the new construction will begin will be governed by the date on which the company receives assurance of the availability of steel and other essential material necessary to carry out the programme.

NEW SULPHUR AND IRON PLANT AT HAMILTON

Noranda Mines has completed plans for the erection of a $4,000,000 plant at Hamilton, Ontario, for the production of sulphur and iron from pyrite ores which have been developed in very large tonnage on the company's mine at Rouyn, Quebec. The initial plan calls for the shipment of 300 tons of pyrite per day over the rail haul of some 370 miles from Noranda to Hamilton. It has been estimated that the plant will produce the equivalent of 150 tons of sulphur per day, about 33 per cent of which will be elemental sulphur and 67 per cent in the form of sulphuric acid. The new enterprise is considered to be of signal importance to the paper-making industry of Canada.

Hopes are growing among gold producers in Canada that the Government may soon authorize mining companies to sell a substantial part of current gold output in fabricated form on the open world market. The gold stored in the United States continues to shrink. This shrinkage has averaged more than $10,000,000 per day since the beginning of 1951, it being evident that for the past three months the U.S. Treasury has lost very close to $1,000,000,000 of its gold. This fact, coupled with the continued rise in property values throughout North America has suggested a possible flight from the American dollar pending further developments in the tense international situation.

Dividends paid by Canadian corporations during February exceeded $29,640,000, thereby exceeding any former February record in the history of Canada.

FALCONBRIDGE DEVELOPING LEVACK PROPERTY

Falconbridge Nickel Mines is about to develop another nickel producer in the Sudbury district. The original Falconbridge mine is itself producing over 2,500 tons of ore daily. The company's more recently developed No. 2 mine, the McKim, is producing 400 tons daily. Now comes the development of the company's Levack property where work has already started on the initial plan to carry a three-compartment shaft to a depth of 1,200 ft. Preliminary diamond drilling to 800 ft. in depth indicated some 3,500,000 tons of ore on the Levack. Development is planned to provide for production of 1,000 tons daily from this new enterprise.

Advice has just been received by the Canadian representative of *The Mining Journal* that the United States' Government is showing a desire to extend financial assistance to private enterprise in a position to enlarge the scope of nickel production in Canada. A few facts available have been bundled together with unofficial reports that a new nickel refinery might be erected in Ontario to augment the refining now being done by the Falconbridge Nickel refinery at Kristiansand, in Norway. It is remembered that during World War II, the use of the Norwegian refinery was lost to the Allies. Not only is there the question of greater refinery capacity for Falconbridge Nickel Mines in Ontario, but there is also the matter of providing facilities for refining the nickel which is to come from the steadily developing nickel ore deposits of Sherritt-Gordon Mines in Manitoba.

Canadian production of pig iron and steel reached all-time peak totals in the calendar year 1950, according to the Bureau of Statistics. Output of ferro-alloys was, however, at a lower level. The year's output of pig iron amounted to 2,309,732 tons, as compared with 2,154,352 in the preceding year, and the production of steel ingots and castings totalled 3,384,131 tons against 3,186,930. Production of ferro-alloys amounted to 181,575 tons, compared with 211,603.

Heavy two-motor transports are being employed to fly construction material to the height-of-land between the Gulf of St. Lawrence and the new iron fields of Quebec and Labrador. Frozen lakes are being used as landing fields, while a new intermediate airfield has been established as the main distribution point for railway construction job. Some thought is being given to the question of speeding up construction and development so as to gain possibly one year in the date when actual production may commence. To do so would entail heavy additional cost, a question which is now being weighed in the balance as against the advantages to be gained.

The Minister of Trade and Commerce, Mr. Howe, announced in the House of Commons on February 22 that the Canadian Government has taken steps to purchase for $328,000 the known tungsten ore reserves of the Emerald property in British Columbia from the present owners, Canadian Exploration Ltd. Equipment has been ordered to build a mill of 250 tons daily capacity and the mine, which has been closed down for some years, is being rehabilitated. It is expected that initial production of tungsten concentrates will be obtained by next autumn.

NATURAL GAS PIPELINE PLANNED

Now that the $100,000,000 pipeline has been completed from the oilfields in Alberta to the head of the Great Lakes, a distance of 1,200 miles, and with tankers to go into service in the transport of oil to Canada's industrial East, attention is turning toward the question of building another huge line designed to convey natural gas from the prairies to industrial Ontario and Quebec—a distance of 1,500 to 2,000 miles. Also, ways and means are being studied with a view towards finding outlet for oil from Canada's West to industrial sections of north-western United States. And while interest in oil and gas is centered to a large extent on the province of Alberta, yet the fever associated with new opportunity is spreading rapidly across the adjoining province of Saskatchewan, and is even now moving across the province of Manitoba. For the past few weeks a boom has developed in Manitoba in the purchase of mineral rights owned by farmers in such areas as offer prospective merit as possible sources of oil or gas.

The Asbestos Market

Asbestos of Philadelphia reports that asbestos is running at peak volume with all grades in full demand, and spinning, shingle and paper grades in short supply. Canadian producers increased their prices by some 10 per cent from the beginning of January and have to face new labour contracts involving an advance of some 15 per cent in base rates as well as increased costs of supplies and raw materials. The preliminary estimate of Canadian production last year is 877,650 s.tons compared with 574,906 s.tons in 1949.

Combined Ore Smelting and Scrap Reclamation Practice

By C. C. DOWNIE

In view of the interest at present evident in the reclamation of metals from all possible sources to offset existing shortages, some of the methods adopted by the large American refineries might be of interest. The latter are not only concerned with ores and regular sources of metallic residues, etc., but acquire almost any metal-bearing waste, or scrap material, containing the non-ferrous metals. Arrangements for general handling and operating procedure here, in the U.S.A. and in Germany, differ considerably. In this country, the total amount of actual smelting is relatively small, and hence there is not the same provision for incorporating associated sources of raw materials, with the result that there are many small metal refining concerns limited to melting down scrap, turnings and residues alone. American and German refineries benefit by having large reserves of ores containing copper, lead, zinc, antimony, etc. already in hand, whereby the secondary or scrap sources are conveniently and economically dealt with, using the same large operating layout. Where copper predominates, matte is prepared in capacious blast furnaces and transferred to converters, at which stage collected scrap is added, which acts as a supplement to the already molten matte from ore treatment, thereby saving time, labour and fuel.

Literally no conditions of the kind exist in this country, whereby costs are correspondingly higher. But this is not the only shortcoming. The melting down of scrap, turnings and residues means that no provisions are made for recovering associated constituents, which go under the category of "impurities," since they detract from the physical characteristics of the pure metals, and likewise place an embargo on the market price obtainable.

The advantages of co-operation between ore smelter and scrap refiner are immediately apparent. In the electro-refining of the product from the converter, the anode slimes containing tin, lead and antimony are melted and cast as fresh anodes and electrolysed to reclaim tin and antimony, whereby the so-called "impurities" frequently exist in sufficient quantity to cover the costs of the process, let alone ensuring the refined metals possessing the best physical properties. Such impurities include cadmium, bismuth, selenium, tellurium and sometimes cobalt, all of which find a ready market for industrial uses. American practice differs from German practice in that there is a much larger scrap supply from the automobile industries, and more attention is devoted to reclaiming the small tin content available.

HANDLING LEAD AND ZINC-BEARING MATERIALS

From the aspect of lead, ores containing 30 per cent lead and a zinc content ranging from anything up to 20 per cent, besides 4 per cent copper, are likewise smelted in blast furnaces to give crude pig-lead and matte. To this lead is added collected scrap and odd assorted material containing lead, so that all ultimate refining is carried out at the same time. In one arrangement 250 tons of gross charge was handled per day in the blast furnaces from sinter containing up to 4 per cent sulphur. Instead of allowing the slag to run out continuously, as is customary elsewhere, in view of the high zinc content, the slag and matte were allowed to collect and be run off every 15 minutes for separation on a forehearth, after which the slag was dispatched to the zinc fuming department. Such slags were known at times to reach as much as 18 per cent zinc, the fuming of which, to take off zinc oxide, has been described previously. The products were up to 35 tons lead, 15 tons matte and the remainder slag, which latter tonnage varied according to the charge.

Up to 25 per cent of the charge was made up of return slags and with a like percentage of drosses, skimmings and other lead by-product materials. The matte differed from normal mattes in that it could contain up to as much as 10 per cent zinc, besides up to 36 per cent copper and 20 per cent lead. Mattes of this kind require more careful handling in the converter to ensure the control of endothermic and exothermic conditions, while the toppings taken off can sometimes reach an almost infusible condition. Where, however, some 16 per cent lead is present, about half this content of zinc can be absorbed in the siliceous slag and remain relatively fluid, and is returned to the blast furnace. Unlike ordinary converter work in forming crude or "blister" copper, this work is only carried sufficiently far to give an enriched matte containing up to 60 per cent copper. The path of the zinc through the process is that it is partly volatilized during initial blast furnacing; secondly, by fuming from the slag and tapped lead; and thirdly, by both volatilization during blowing and removal of toppings in the converter. Very little zinc remains in the concentrated matte, and which latter is transferred to the main converter process where scrap copper alloys, brasses, gun-metals, etc., are added in the production of "blister" copper. The ultimate electro-refining of crude copper of the kind is more complicated than where normal "blister" copper is handled, as it rarely contains less than 1 per cent lead, 0.5 per cent nickel and more than 96 per cent copper, despite the second treatment in the converter.

SCRAP MATERIAL INCORPORATED

Regarding the tapped lead, this is conveniently drossed in conjunction with all descriptions of collected lead products ranging from plumbers scrap, piping and sheet from house demolishers, to waste lead paints, discarded clippings from sheet metal works, reduced lead drosses, skimmings, ashes, and red-lead and white-lead wastes.

American refineries benefit by the large accumulations of discarded car batteries to such an extent that machines are installed for the specific purpose of conveniently breaking them up to facilitate ultimate handling in the refinery. To obviate manual handling, these are loaded on to a chain belt conveyor, which takes them in rotation under a crushing device, which breaks off the shell while water is played over them. The shells pass to one side and the lead plates pass directly to the drossing refineries continuously.

Old car radiators are fired in an oil-fired furnace in enormous quantity to cause the solder to drip off; this either goes to the drossing furnace or, if sufficient tin content warrants, to the lead and tin electro-refining tanks. The loosened brass sections of the radiators are then charged into the converters to enrich the copper content. The lead-drossing furnace also receives accumulations of type metal discarded by printers, besides some of the

poorer class white bearing alloys, tea-lead, capsule metal, old collapsible tubes, etc. All scrap and secondary metals richer in tin content are kept separate for electro-refining, and only the poorer ones pass to the lead-drossing furnaces. The first treatment comprises raising and lowering the temperature in order to take off the dry drosses, which consist of copper containing some of the antimony. If the lead contains any appreciable tin, the use of sulphur at this stage is to be deprecated, although it is followed in some American works where there is little tin to contend with.

Where tin is absent a small sulphur addition, such as from galena, can remove remaining copper where it is initially not more than some 2 per cent. Large softening furnaces have a capacity of some 300 tons and attend to the softening of upwards of 200 tons per 24-hour day, and wherein practically the total antimony content of 1.5 per cent or more is removed. Where battery lead is included the antimony content is appreciably increased, but the large area of the softening pan (sometimes 33 ft. by 16 ft. wide) easily disposes of this metal, while the material removed contains upwards of 22 per cent antimony. Despite the fact that so much secondary or scrap material is included in the charges, a modification of the Parkes process is still applied at the present day to remove any small silver content, although this may only amount to a few ounces per ton. Likewise, a much criticized process for removing bismuth, namely, the use of minute additions of a patented calcium-magnesium alloy, is still persevered with, which reduces bismuth down to 0.01 per cent.

BENEFITS OF COMBINED OPERATIONS

The foregoing methods of finding an opening for different scrap materials in the regular ore smelting process are thus seen to advantage for copper, lead, zinc and antimony, respectively. The full advantages are not apparent until the conclusion of the treatment, when wet extraction or electro-refining is carried out. For example, where the lead is to be consumed in white-lead production, much of the foregoing drossing treatment can be omitted. During electrolysis all bismuth, antimony, tin and silver are accumulated in the anode slimes without interfering with the purity of the white-lead. From another aspect, spelter and crude zinc alloy scrap, which may contain appreciable impurities, are passed to the product from the zinc retorts for final refining, and where this is performed electrolytically, not only cadmium, but gallium, thallium and indium are obtained as by-products, all of which now take a prominent part in modern industries, but which are totally lost by the purely scrap refining system. The flue dust collected from all sources, *i.e.*, blast furnace, converter, drossing and other refining hearths, is utilized by arrangement with the lithopone factories in the U.S.A.

During solution of this flue dust in sulphuric acid, the addition of metallic zinc precipitates tin, cadmium, thallium and indium, which residue is returned for electro-refining, mainly to recover the tin.

Unlike the electrolytic processes, this gives an almost immediate return of by-products. Current consumption is, however, not unduly large in these methods, since by the Betts lead electrolytic process, 66.9 tons are obtained per h.p. year, and up to 26 tons per h.p. year in making white-lead, while the refining of copper (series) amounts to 43.7 tons per h.p. year. Zinc electro-refining does not show such a good record, since impurities can make a more marked difference on the extent of performance, upon which researches are still in progress. (Those desirous of looking up particulars are referred to various publications of the Anaconda and Trail plants which appear in the *Engineering & Mining Journal.*)

In comparing these modern methods carried out elsewhere with the somewhat antiquated systems followed in this country, and which are undoubtedly partly due to the absence of proper ore smelting practice, some differences will be immediately apparent. The average firm engaged on melting brass for foundry purposes here allows the zinc fumes to pass into the atmosphere, although this is not allowed in the London district. This has been known to amount to a loss of 5 per cent zinc and seldom is lower than 3 per cent with the best reverberatory furnace practice. When operated on a larger scale, where the installation of electrostatic precipitators is justified, this loss is almost totally eliminated. Without the co-operation of regular ore smelting, copper alloys are simply melted down, whereby the impurities, which might otherwise be utilized, retard the sale of the finished product, as the physical properties are impaired. A common method in small refineries where tin was lacking was to add small proportions of white bearing metals so long as such additions did not increase the antimony content beyond 0.5 per cent. This again limits the saleability, as the characteristics are never so reliable. The same additions were made to solder so long as the antimony content did not exceed 3 per cent, but again limited the extent of application. As a large proportion of the world's copper is still pyro-refined, minute quantities of unwanted bismuth, nickel, cobalt, selenium, etc., are simply passed around scrap refining and brass founding concerns, whereas these same commodities help to pay expenses of refining in the large U.S.A. refineries, besides providing pure metallic copper.

Zinc probably holds the worst record of any metal here, since it is no exaggeration to state that no other metal is continuously exposed to such extensive volatilization losses, alike in scrap refining and brass melting. There is only limited incentive to tackle tailings from galena concentration which, as previously mentioned, represents a source of zinc at present used up for road-making schemes. Instead of collected zinc fume being turned to most account by co-operation with the lithopone factories, not a little of this, at least in pre-war days, had to be dumped as waste, as no market could be found for it. Briefly, some means of linking up the by-products of refineries with the activities of wet extraction processes might help to offset existing metal shortages, and might repay investigation.

Base Metal Leases in Eire

Widespread efforts are being made in Ireland to develop the country's lead, zinc and copper deposits. A report, recently presented by the Minister for Industry and Commerce, under the Minerals' Development Act, shows that recent State mining leases have been granted in the following areas:

County Sligo. 344 acres at Abbeytown, to the Abbeytown Mining Co., Ltd., Dame Street, Dublin. The Johannesburg Consolidated Investment Company, have also been granted lead and zinc leases at Kilmacowen and Lugawarry, Co. Sligo.

County Leitrim. 426 acres at Shanvaus Mountain and other districts have been leased to Thomas Thornton, Lurganboy, Manorhamilton.

County Tipperary. The Silvermines Lead and Zinc Co., Ltd., Dame Street, Dublin, have been granted mining leases at Shallee Coughlan, Shallee White and Garryard West.

County Kilkenny. A lead ore mining lease is held by Joseph Knox and James Malone, Inistioge, for lands at Brownsford, County Kilkenny.

County Mayo. A copper and lead mining lease has been granted to Peter Kelly, Drumnin, Westport, County Mayo, for lands at Tawneycrower.

Power Plants and Torque Converters for Production Trucks

By C. R. BURTON, Oliver Iron Mining Co.

In order to limit the scope of this paper, presented at the 1950 Metal Mining Convention, American Mining Congress, Salt Lake City, Utah, and abstracted below, the author has selected as a subject the power plants and torque converters for ore production trucks on the Mesabi Range of Northern Minnesota.

The truck was first introduced on the range as a means of removing small iron ore deposits from a section of a large railroad haulage mine. During the past 17 years, it has increased in importance in iron ore mining. The trucks originally introduced were of standard type, varying in size up to three tons capacity. As the advantages of this type of flexible haulage system became apparent, the size of units increased. There are now found on the Mesabi iron range many different haulage systems: all rail, truck to rail, truck to conveyor, truck to skip, dragline to conveyor, and various combinations of the above.

Rail haulage, using Diesel-electric or electric locomotives from a large area embracing various types of material, is probably the most efficient means of haulage when large tonnages are involved. The conveyor belt is an excellent means for transporting large quantities of material between two definite points, but is limited as to size and structure of material handled, high initial cost and relative inflexibility as to changes in location. The inclined skip method for removing material from a mine lends itself very well to a deep and confined pit.

Trucks have increased in use due principally to the manoeuvreability and flexibility of rubber-tyred units. They are not as efficient carriers as rail or conveyors, nor as good climbers as the skip hoist, but they are much better suited to meet the varying conditions encountered in many operations.

At the present time, approximately 900 heavy duty off-highway haulage vehicles are in operation on the Minnesota iron ranges. For many years, the 15-ton unit was most widely used. About 1940, a few 30-ton trucks appeared, but they did not increase rapidly in popularity. In 1942, a 20-ton truck was introduced and received immediate acceptance. In 1949, 142 trucks were installed, nineteen were 15-ton, ninety-two 20-ton, and thirty-one 30-ton.

Most of the engines in off-highway units on the Mesabi Range are using Diesel fuel. The popularity of butane as a fuel will depend upon the future price structure and the quality of the product compared with fuel oil.

RECENT IMPROVEMENTS IN ENGINE COMPONENTS

The present wide range of engine selection results from many changes and improvements in engine component parts and accessories. By referring to a few of the improvements made in engines in recent years, one can understand the vast amount of effort necessary to accomplish these changes. The crankshafts have been changed to alloy steel, hardened, and balanced statically and dynamically; automatic vibration dampeners have been installed on the crankshafts; the bearings are continuous groove, steel back copper lead precision type; the cylinder liner water seals have been improved and chromium plated liners have improved engine life in some installations. Fuel injection systems have been improved by better fuel pumps, by increased turbulence in the combustion chambers and by changes in fuel injection timing to allow longer periods for more complete combustion of the fuel. The more extensive use of super-chargers has allowed a greater volume of fuel to be injected per stroke of the piston, thus increasing the horsepower available at the crankshaft. Copper tubing has been replaced by high pressure flexible hose, thus eliminating leaks and failures caused by vibration. Engine weight in pounds per brake horsepower has been lowered substantially on the large engines.

All internal combustion engines have at present lower starting torque and are less efficient at starting speeds than at high speeds. Although geared transmission has been generally used to increase starting torque, it has the disadvantage that it must be shifted between fixed ratios to effect the proper speed-torque relationship necessary to accelerate the load at the fastest rate. The hydraulic torque converter has overcome this disadvantage since it acts as both a clutch and an ideally geared transmission in multiplying engine torque from two to six times at lower engine operating speeds. The torque converter changes the engine output from one of constant-torque variable-horsepower to an output of constant-horsepower variable-torque, an aspect of torque converter operation which is highly desirable in many applications. Another advantage is the cushioning effect on both the engine and driven members from shock loads.

ADVANTAGES OF TORQUE CONVERTER APPLICATION

Some of the advantages of torque converter application in production trucks on the Mesabi Range area: less maintenance of engines, clutches, transmissions, drive lines, differentials and drive axles; less drivers' skill required and drivers' fatigue reduced; increased truck production due to less shifting and improved manoeuvreability, and the possibility of using larger horsepower engines. It was found in some torque converter applications that the above benefits were realized without any noticeable increase in fuel consumption per operating shift.

One decided advantage of the hydraulic torque converter from the truck manufacturers' viewpoint is that the converter eliminates the problem of engine synchronization. This expands the field for many more engine combinations than previously were possible. Engine combinations have been proposed which would allow a total of 700 h.p. in one truck by the use of two engines. While on the subject of truck power plants, it may be well to point out a "newcomer" which may offer a number of benefits; namely, the gas turbine. The inherent advantages of this type of powering are many, including less weight and space requirements, easier cold weather starting, air cooling and the elimination of the warm-up period. In addition, maintenance problems should be simplified because of the reduced number of weight of parts. The gas turbine, with gas rather than a mechanical connection between the power generating and the power output units, has the desirable features of a fluid coupling; *i.e.*, infinitely variable transmission, high starting torque and rapid acceleration. With such inducements to bring the gas turbine into the field of truck motive power, it warrants careful consideration to determine whether it may compete with the piston engine and torque converters in the 50-500 h.p. range.

Technical Briefs

International Nickel's Research Work in 1950

The annual report for 1950 just issued by the International Nickel Co. of Canada reveals that progress has been made on the solution of many problems connected with the transition to complete underground mining. Research has demonstrated, for example, that the lower grade ores of the Creighton mine can best be mined by block-caving methods, whereas the blasthole method is best suited for Murray mine and some areas of the Frood-Stobie mine.

Studies of new metallurgical processes better adapted to the ores which increasingly comprise the company's production have been under way. A number of these research projects have been incorporated into extensive pilot plant operations; one of these will lead shortly to the production of anodes from nickel sulphide concentrates for the electrolytic refining of nickel, a new method which will provide substantial financial savings.

Research, involving pilot plant work, has been devoted to the greater utilization of ores through the production of iron ore and sulphur dioxide. This work is encouraging not only from the standpoint of by-products recovery, but it has major significance also from the point of view of simplifying smelter process metallurgy.

The company's research on improved nickel products and their uses was increasingly directed to materials for national defence and to those related to emergency nickel conservation. In view of the growing importance of jet-propelled aircraft, the company intensified its research, both in the U.K. and the U.S., on high-temperature properties of metals required in such planes.

Research has been continued on the many problems arising from the industrial development of Ductile Cast Iron, announced by the company in 1948; Ductile "Ni-Resist" was one product of the year's research in this field—a new, strong, and inexpensive corrosion-resistant material.

The new Harbor Island Marine Corrosion Laboratory, Wrightsville, N.C., was completed last year. This laboratory reflects the growth of INCO's research into corrosion of alloys in salt water and sea air, conducted since 1935 at Kure Beach, N.C. Twenty thousand specimens are at present being subjected to sea air corrosion tests at Kure Beach.

Lastly, new facilities completed at the Bayonne Laboratory permit expansion of research on electroplating, steel, "Monel," corrosion-resistant alloys, high-temperature alloys and platinum metals.

A summary of last year's financial results and development work appears on page 256 of this issue.

South African Diamond Research Laboratory

It is of interest that the Diamond Research Laboratory of Johannesburg, Union of South Africa, was set up recently by the leading diamond companies of the world for two purposes: (1) to assist the mining companies in problems concerning their extraction process and in investigations leading to increased output and reduced cost, and (2) to act as a research and service centre for all who use diamonds in any form. This work will include studies on improvement of existing types of diamond tools, drill crowns, grinding wheels, etc., and the development of entirely new uses for the industrial diamond.

The laboratory is divided into the following sections: chemical, cutting and polishing, drilling, engineering, metallurgical and physical. All sections are equipped with the latest types of research tools and staffed by experts in their respective fields. Several projects of particular interest are now being studied in the laboratory. An electrostatic separation method has been devised which may be used in three different ways in the industry: (1) for sorting to replace hand sorting of diamondiferous concentrates obtained from the grease tables, (2) as an analytical tool to determine the diamond content of mill feed and tailings, and (3) as a full-scale recovery process for diamonds smaller than six mesh from gravels or kimberlite. A second process has been tested in the pilot plant stage for the treatment of diamondiferous gravel to make the diamond adhere to the grease surface without affecting the gangue.

Progress is also being made in the metallurgical section on a froth flotation method for recovery of smaller size diamonds, and concentration by means of tabling and superflocculation. In the physical section of the laboratory investigations are being carried out on the fundamental differences in properties of Type 1 and Type 2 diamonds, and on improvement of the particle shape of crushed diamond.

Noranda Mines New Process to Produce Sulphur from Pyrites

The world-wide sulphur shortage and the consequent scarcity of sulphuric acid has given powerful impetus to Noranda Mines' project for the extraction of sulphur from iron pyrites. A $4,000,000 reclamation plant will be erected at Hamilton and supplied with over 300 tons of pyrites per day from Noranda Mines. This plant will produce about 150 tons of sulphurous material per day, one-third of this total to be pure sulphur, the balance in the form of sulphuric acid. In addition, about 100 tons of high-grade sinter iron will be produced daily as a by-product. The importance of the process, developed by Noranda Mines during the last ten years, lies in the fact that it makes possible the utilization of pyritic ores as a source of elemental sulphur to supplement declining output from the straight sulphur mines.

South African Oil-from-Coal Plant: Agreements with M. W. Kellogg Co.

The South African Coal, Oil and Gas Corporation Ltd. (SASOL) has recently concluded a series of agreements with the M. W. Kellogg Co., of London and Paris, under which Kellog will act as consulting engineers and contractors for the oil-from-coal plant which is being built at Coalbrook, O.F.S. Kellogg will be responsible for the design of the works, selection and purchase of equipment, construction and initial operation of the integrated unit. The main synthesis process to be used will be the high-velocity, circulating catalyst synthol method, developed by Kellogg, and it is anticipated that a smaller unit, based on the Ruhr-Chemie fixed catalyst synthesis technique, will be added. Overseas suppliers of equipment will have as much as possible fabricated in South Africa. It is anticipated that about £8,000,000 will be spent in the Union on plant construction, and civil engineering works. Further details of this project appeared on p.155 of our issue dated February 16, 1951.

A New Type of Scintillation Counter

In prospecting for radioactive minerals, one invariably thinks of Geiger type of counter as being indispensable. There are, however, other ways of detecting and making measurements of radioactivity. One of these is the use of the scintillation counter, a new type of which has recently been described by G. M. Brownell (*Econ. Geol.*, 45, 2, 167, 1950). This instrument is said to be 100 times as sensitive as portable Geiger counters and was used in the investigation of the pitchblende deposits of the Lake Athabaska region. Maps were made showing zones of equal radiation intensity or "isorads" in units of 5×10^{-4} milliroentgens per hour and by means of these, new deposits were located.

Metals, Minerals and Alloys

Copper.—There is not much news regarding copper this week: the U.S. market continues tight with buyers endeavouring to secure more tonnage. Orders for March were computed at over 80,000 s.tons earlier in the month. The N.P.A. has eased copper cuts for final consumer durable goods to manufacturers of cars and refrigerators, etc., who may use as much copper as they can get.

The Copper Institute reports the output of crude in the U.S. in February as 89,912 s.tons (86,961 in January). Refined was 101,199 s.tons (110,144). Domestic deliveries were 99,630 s.tons (108,128). Stocks at the end of February were 59,324 s.tons (54,883). Outside the U.S. primary copper output was 108,069 s.tons (114,267); refined is reported as 90,156 s.tons (97,599); deliveries were practically unchanged at 71,467 s.tons (71,597), and stocks are computed at 151,288 s.tons (146,837).

Mr. Donald Dallas, of the Revere Copper and Brass Co., on his return from Chile advocated a higher price being paid for Chile copper—possibly 28c. He thought the U.S. Government should buy metals from American owned mines in Chile at this price and absorb the excess over the official 24½c. as was done during the last world war. He also called for the abolition of the import duty. Another suggestion to assist U.S. copper interests is that there should be tax relief. A shipment of 80 tons of Chile copper is due to arrive in Japan shortly. Keen competition among American buyers to find Japanese customers is reported.

The chairman of Magma Copper stated at the annual meeting that output of copper last year was 24,143 s.tons besides 517,518 oz. silver, 14,257 f.oz. gold and 5,390 s.tons of zinc concentrates. The copper output in 1949 was 20,502 s.tons. Production costs were 14.61c. per lb. (17.05c. in 1949) and the price received was 21.05c. compared with 18.68c. in 1949. The company now owns the whole of the outstanding shares of the San Manuel Copper Corporation. The Kennecott Copper Corporation output last year was 32 per cent higher at 576,033 s.tons. The Phelps-Dodge Corporation produced 244,826 s.tons last year (232,203 s.tons in 1949). Mr. Louis Cates expressed the view that any roll back in the present official price would be extremely unwise.

Total output of Northern Rhodesia last year was 311,000 tons compared with 289,900 tons in 1949.

Lead.—The market in the U.S. remains tight and it is reported that there may be less lead to offer for April shipments than for March. The export market is quoted at 19c.-20c. f.a.s. Gulf Ports. The Emergency Lead Committee formed in April of last year to impress the needs of the domestic lead mining industry on the attention of the Administration has, through Mr. F. E. Wormser, complained that heavy imports of lead into the United States are inimical to their interests, as the importing countries, Mexico, Canada, Peru, Australia, South Africa, Yugoslavia, etc., have the advantage of a devalued currency, and they urge that this fact should be taken into account in any future trade arrangements. They point out that domestic mined production last year was 400,000 s.tons and imports 550,000 s.tons, and that while the Mexican Trade Agreement ceased to operate from the beginning of the year, the Torquay Conference leaves final determination in suspense, for when the secretary of the Committee went to Torquay last October he was told that the question of currency devaluation was not being considered. There are many cross currents among United States commercial interests just now, but it seems illogical to complain of the shortage of lead, and at the same time to put obstacles in the way of imports. The price of scrap in Australia has been raised from £48 to £55 per ton for first grade battery scrap.

Tin.—The step long feared by United States consumers of the Administration assuming a monopoly of imports and sale of tin was realized last Monday, and all consumers have been put under allocation control as from Monday next. This move places the N.P.A. or its agent the R.F.C., in a dominant position to control the world price, so long at any rate as over-production of the metal, apart from stockpiling, continues, and the U.S. can clearly abstain from buying for a long time to come in view of the immense stocks now carried. It is useless to speculate regarding what policy will be adopted, but clearly the International Conference which opens in Washington this week will be facing a situation into which many fresh factors have entered, since the convention was originally arranged. Actually most of the United States' purchases for stockpile in the past six months have been outside the Singapore market under existing contracts with Belgian, Dutch, Indonesian and Bolivian producers, though the price was governed by the Singapore quotation. Some anxiety seems to be felt in Belgian circles at any rate where it is pointed out that the existing contract cannot be unilaterally terminated, and that six months' notice must be given before the end of June of an intention to stop, with deliveries continuing to the end of the year. As a new agreement was recently arrived at with Bolivian producers the R.F.C. presumably will continue to receive these concentrates. The original statement that the American Government would suspend new purchases for stockpiling in the open market until a "reasonable" level of prices was reached has naturally given rise to speculation as to what they would consider a reasonable price. Estimates in the United States seem to vary between 75c. and $1.25 per lb. Grade "A" tin was quoted on Wednesday at 134c. nom.

The Indonesian Trade and Industry Minister, Mr. Sumitro, is reported from Djakarta as disturbed by the recommendation—apparently in Senator Johnson's report—for relating the granting or withholding of export licences for American goods to the import of tin.

In our last week's notes, Straits shipments of 5,412 tons were erroneously stated to be for January whereas they were for the month of February. January shipments were 4,588 tons. Total stocks of tin in metal and concentrates in Malaya was reported as 7,615 tons at the end of January, as against 6,512 at the end of December.

Zinc.—The tightness in the U.S. zinc market has led to the N.P.A. making a further cut-back in civilian consumption to 75 per cent of the quantity used in the same period of 1950 by the brass mills, but wire mills and foundries are spared. The American Zinc Institution gives February production at 70,285 s.tons as against 80,937 s.tons in January. Deliveries were reduced to 69,380 s.tons compared with 79,609 s.tons. Stocks were still low at 11,117 s.tons. A United States firm is said to have contracted with Japanese interests for the import of 1,000 tons of zinc concentrates from Australia, to be shipped about the middle of the month.

Aluminium.—The production of primary aluminium in the U.S. continues to rise and in January reached 67,954 s.tons, the highest figure since May, 1944. Total U.S. output last year was 718,622 s.tons. The Celler Committee of the House of Representatives monopoly investigation organization in a lengthy report has strongly criticized the Government's programme as tending to augment monopoly power rather than independent competition by its big monetary grants to the three integrated producers, Alcoa, Reynolds and Kaisers. The Ministry of Supply put into force its aluminium Scrap Price Order from last Monday with ceilings of £96 per ton for pure aluminium scrap and proportionately less for other materials. The N.P.A. has

eased cuts on aluminium use owing, it is said, to enforcement difficulties.

Sulphur.—It appears to be thought in the United States circles that the U.K. allocation of sulphur in the second quarter of the year will not be less than the 81,000 tons allocated in the first quarter. Should this allowance be continued for the rest of the year shipments would represent about 324,000 tons. Our imports from the United States last year, according to the Board of Trade figures, were 438,934 tons; only 357 tons were derived from other sources. The Official Bulletin for Industry estimates that known deposits of sulphur in America may be exhausted in another 15 years at the present consumption rate.

Tungsten. — Sentiment regarding tungsten minerals seems to have undergone a complete change, largely owing to the uncertain outcome of various political factors. With the ceiling price in the United States of $73 (585s.) per unit, importers there cannot see any business. There is also talk of the formation of an international buying agency, which, if consumated, would obviously impose a ceiling price. Here buyers are sore over the failure of many Portuguese sellers to fulfil their contracts and the Continent is out of the market as well. The position in Portugal at a recent date is discussed by our Portuguese correspondent elsewhere in this issue. The last transactions we have heard of here were sales at 625s. per unit, but no buyers. We have so far seen no report of the progress of the outcome of the Anglo-Portuguese negotiations.

A spokesman of the Portuguese Ministry of National Economy has refused to state whether the recent export tax on wolfram would be increased as has been rumoured.

Gold.—Transvaal gold output in February was 886,507 f.oz., as compared with 954,791 for January and 916,792 f.oz. a year ago. Production of Colombia in November last was 36,378 f.oz., making the total for the 11 months 347,346 f.oz., an improvement of some 16,000 oz. so far last year.

It is reported that M. Camille Gut, the manager of the International Monetary Fund will retire when his five-year term of office expires in May. Mr. Gut is internationally regarded as one of the world's most able negotiators and his retirement from the management of the Fund would be generally regarded as a further weakening of the effective working of the scheme.

The London Metal Market

(From Our Metal Exchange Correspondent)

The blow to private enterprise in America has fallen, by the R.F.C. being nominated the sole importers of tin. From this distance it is not possible to form an unbiased opinion of the situation in the States, but the present action of the American Government is very difficult to understand both as to its substance and to its timing. The British Government has often been criticized from the other side of the Atlantic for its policy of bulk buying, and now we have the same principle being adopted in America for a basic raw material which they have to import. What effect the decision will have on the current meeting in Washington it is hard to say, but it can be surmized that the reaching of an agreement between the Americans and the producing countries has been rendered more difficult.

The world price structure is at the moment completely out of alignment, and it may be some weeks before the American and non-American prices become approximately equal; and it is expected that all other countries which have funds available will purchase from Singapore all the tin they require before the Americans are able to obtain any tonnage.

On the London market the price appears to have become stabilized after the recent abrupt fall, and its further course seems likely to be settled by the way in which the adjustment between the American and Singapore prices takes place.

On Thursday the official close on the tin market was: Settlement price £1,420, Cash Buyers £1,420, Sellers £1,440; Three months' Buyers £1,160, Sellers £1,165. In the afternoon the market was steady. Turnover for the day was 185 tons. Approximate turnover for the week was 930 tons.

The Eastern price on Thursday morning was equivalent to £1,169 per ton c.i.f. Europe.

Iron and Steel

In the light of the known difficulties under which the steel industry has been operating of late, it is surprising to learn that last month's ingot output was the highest ever for the second month of the year, and pig iron production was 3,200 tons a week better than in January. There is no doubt whatever that for several months past high outputs have only been sustained by heavy drafts upon stocks of raw materials, and this being a process which cannot be continued indefinitely, the inference is that there may be a steep fall in production figures during the next few months.

Big tonnages of foreign ore have been lost to the industry because of the diversion of ore carriers to the import of coal. It is suggested that the loss on this account amounts to nearly a million tons. Stocks of iron and steel scrap now amount to barely half a million tons compared with over 900,000 tons in July last, and the monthly allocation of coke has been cut from 207,000 to 200,000 tons. Probably fuel supplies will be speedily restored, since the crisis period is now past. But it will be a much more difficult and protracted job to overtake the arrears in ore imports, whilst reliable forecasts indicate that foreign scrap receipts this year are not likely to exceed 50 per cent of last year's figures.

Against this background the rumours of a re-introduction of some system of controlled distribution of iron and steel, are at least plausible. Three of the four men who have been appointed to lead the arms drive have been associated with the steel industry, and it is reasonably assumed that there is bound to be some form of direction to ensure that the necessary supplies of steel for the prosecution of the defence programme are readily available.

It is in fact semi-officially confirmed that the steel supply position is under review. Certainly both home industrial and export demands are very heavy and makers already have such extensive commitments that they are in no hurry to accept further bookings. Many foundries of late have only been able to keep going by drawing upon their stocks of pig iron; re-rollers are maintaining constant pressure for more liberal supplies of steel semis, and maximum outputs of steel plate sheets and strip are insufficient to satisfy the pressing needs of the shipbuilding and other industries. There is, moreover, a heavy overseas demand for finished steel products and some official guidance as to the respective tonnages which can be allocated to home use and the export trade would be welcome.

Tinplate.—In the tinplate market the chief pre-occupation of makers is the search of steel scrap, all grades of which is scarce, with prices ranging from 74s. 5d. to 85s. 2d. per ton according to requirements. There is no falling off in plates or sheets.

Coal

Last week's coal output of 4,614,600 tons was the best recorded by the Ministry of Fuel since the week ended December 16 last when it reached the 1950 peak of 4,766,900 tons with 4,000 fewer workers on the colliery books. The disparity between the two performances is accounted for by the differences in attendance and in intensity of effort, for the productive value of last week's slightly greater man-power was well exceeded by that of

the longer-working time, the lower absenteeism rate and the higher overall O.M.S. of the pre-Christmas week. Still, last week's returns are noteworthy for the evidence they provide of a much improved output trend since the opening weeks of the new year, and for the ten weeks ended March 10 the cumulative total of deep-mined and opencast coal at 44,124,600 tons exceeds that for the corresponding period last year by 1,086,900 tons. For this impressive increase, however, the more general operation of the Saturday morning shift is primarily responsible, for the cumulative statistics give a rise to date in deep-mined coal of 1,400,000 tons, but a fall to date in open cast production of nearly 370,000 tons. Imports are also increasing; and with last week's record arrivals of 118,900 tons the aggregate quantity of foreign coal received to date was raised to 607,000 tons. Distributed stocks are practically unchanged at 9,779,000 tons. Inland consumption is still at a higher rate than a year ago, but exports are down to about 170,000 tons per week compared with 440,000 tons a year ago.

Commenting on the present trends, Mr. Noel-Baker, the Minister of Fuel, expresses the view that if the present rate of production is maintained it is still possible for the miners to achieve the extra Attlee 3,000,000 tons target by the end of April,

MARCH 15 PRICES

COPPER

Electrolytic...	£202 0 0 d/d

TIN

(See Metal Notes above for Thursday's Metal Exchange prices)

LEAD

Soft foreign, duty paid	£136 0 0 d/d
Soft empire, including secondary lead ...	£136 0 0 d/d
English lead	£137 10 0 d/d

ZINC

G.O.B. spelter, foreign, duty paid ...	£151 0 0 d/d
G.O.B. spelter, domestic	£151 0 0 d/d
Electrolytic and refined zinc	£155 0 0 d/d

ANTIMONY

English (99%) delivered, 10 cwt. and over	£360 per ton
Crude, 10 cwt. and over ...	£275 per ton

NICKEL

99.5% (home trade)... ...	£406 per ton

OTHER METALS

Aluminium, £124 per ton.	Palladium (scrap), £8 oz.
Bismuth, 22s. 6d. lb.	Platinum, £27/£33 5s. nom.
Cadmium, 17s. 3d./18s. lb.	Rhodium, £45 oz.
Chromium, 5s. 3d. lb.	Ruthenium, £30 oz.
Cobalt, 15s. 6d. lb.	Quicksilver, £73 10s. nom. ex-warehouse.
Gold, 248s. f.oz.	Selenium, 25s. nom. per lb.
Iridium, £65 oz. nom.	Silver (bar), 78¼d. f.oz. spot and forward.
Magnesium, 1s. 6d. - 2s. lb. according to quantity.	Tellurium, 14s. 4d. lb.
Osmiridium, £35 oz. nom.	
Osmium, £70 oz. nom.	
Palladium, £8 10s. oz.	

ORES, ALLOYS, ETC.

Bismuth	40% 11s. per lb. c.i.f. 30% 9s. 6d.
Chrome Ore—	
Rhodesian Metallurgical (lumpy)	£11 per ton c.i.f.
,, ,, (concentrates)	£11 per ton c.i.f.
,, ,, Refractory	£10 12s. per ton c.i.f.
Baluchistan Metallurgical ...	£11 11s. per ton c.i.f.
Magnesite, ground calcined ...	£26 - £27 d/d
Magnesite, Raw	£10 - £11 d/d
Manganese, Best Indian ...	(Nominal)
Molybdenite (85% basis) ...	(Nominal)
Wolfram (65%), U.K. ...	nom. subject to negotiation
Tungsten Metal Powder (for steel manufacture) ...	43s. nom. per lb. (home)
Ferro-tungsten	41s. nom. per lb. (home)
Carbide, 4-cwt. lots	£30 18s. 9d. per ton
Ferro-manganese, home ...	£32 3s. 7d. per ton
Ferro-manganese, export ...	Nom.
Brass Wire	2s. 2½d.
Brass Tubes, solid drawn ...	1s. 9½d.

Mining Men and Matters

Mr. L. K. Brindley, M.B.E., has been appointed to the board of the Anglo Metal Co. Ltd.

Mr. W. Brown has joined the staff of Nanwa Gold Mines.

Mr. D. S. Burwood has been appointed development manager for Imperial Smelting Corporation and has been elected to the board of the National Smelting Co.

Major V. W. Eyre has resigned from the board of Phoenix Prince Gold Mining.

Dr. H. C. Gunning, head of the geology and geography department, University of British Columbia, has been awarded the R.W. Brock Memorial Chair in Geology, with a grant of $37,500 over a five-year period from the Consolidated Mining & Smelting Co.

Mr. C. A. Jacouris has joined the staff of Buhemba Mines, Musoma, Tanganyika.

Mr. Ronald C. Jewell has been appointed to the board of Sheffield Smelting Co.

Mr. B. G. Skelton has been appointed resident engineer to Goldfields Rhodesia Development.

Mr. W. A. Starling has resigned from Wanderer Consolidated Gold Mines and is now underground manager at the Dalny Mine.

Dr. S. A. Wrobel has taken up the position of research manager with Mineral Recovery Ltd.

The death is announced of **Lt. Col. Sir John Greenly,** one of the directors of Cape Asbestos.

M. & M. Club Golfing Society.—At the Annual General Meeting of the Mining and Metallurgical Club Golfing Society held on March 6, Mr. J. W. Crawley was elected captain for the ensuing year and Mr. H. R. Taylor was re-elected honorary secretary. Members elected to the committee were: Messrs. James Gilchrist, A. F. de Fraine and R. M. Smart. The Society will hold its Spring Meeting at Burhill Golf Club on May 15, and in addition, several evening matches are being arranged to take place later in the summer. The Society is open to all members of the Club including those whose golf is played mainly at the 19th hole.

OBITUARY

VISCOUNT ELIBANK

Viscount Elibank, died on March 11 aged 73, at Cape Town. He had settled in South Africa for reasons of health. He held several colonial administrative posts at the beginning of this century: he was assistant private secretary to the Lieutenant-Governor of British New Guinea and towards the close of the South African war, was appointed private secretary to the Commisioner for Native Affairs in the Transvaal. In 1906, he became assistant private secretary to the Permanent Under-Secretary, Colonial Office, and then held administrative posts in the West Indies. After his return home in 1917, he represented the St. Rollox Division of Glasgow until 1922. Viscount Elibank was chairman of African Investment Trust, London and Rhodesian Mining and Land, and Malaysiam Tin, deputy chairman of Henderson's Transvaal Estates, Mineral Holdings, and Tweefontein Colliery, and was a member of the London committees of Coronation Syndicate, Western Holdings, Rezende Mines, South African Coal Estates, and South African Townships. He was chairman of the Federation of Chambers of Commerce of the Empire in 1931.

Business Items

Mr. G. B. Cassidy has been appointed a sub-manager of the London office of the Commercial Bank of Australia.

Mr. F. G. Penny, M.Inst.C.E., M.I.Mech.E., has been appointed managing director of International Combustion (Holdings) Ltd. and of its subsidiary, International Combustion Ltd., in place of **Sir George Usher,** who has resigned that position with both companies, but remains a director of each company.

Mr. T. H. R. Perkins has been appointed a director of F. Perkins, Ltd., Peterborough.

Sir Robert Sinclair, immediate Past President of the Federation of British Industries, will open the fourth Canadian International Trade Fair to be held May 28 to June 8 in Toronto.

Mr. J. D. Sutcliffe has been appointed commercial director of Richard Sutcliffe Ltd.

Eimco (Great Britain) Ltd., of Barras Garth Road, Leeds, now have a London office at Princes House, 190, Piccadilly, W.1 (Telephone: Grosvenor 2184/5).

The Mining Markets

(By Our Stock Exchange Correspondent)

The general tendency in markets this week has been one of declining business. Markings on Tuesday were 9,829 compared with 14,205 on Tuesday last week.

Prices have fallen on international political events and idle conditions, rather than pressure of selling. A fair number of cheap buyers at the lower levels have exerted a steadying influence.

For most Stock Exchange firms Tuesday was the last day of dealing for the current financial year, and Wednesday saw the beginning of the three week account lasting over the Easter holidays.

Kaffir shares and Rand finance houses have followed the general trend. Throughout the week jobbers reported little business. Interest was aroused by Stilfontein's announcement that the Ventersdorp Contact reef has been intersected in the Margaret shaft at a depth of 1,475 ft. An average assaying value of 5.2 dwt. over a width of 30 in., equivalent to 156 in. dwt., was obtained. While further underground development is essential before any definite conclusions may be drawn, these encouraging results have aroused hopes of a second payable reef on the property. After publication of the news, the shares improved 6d. to 25s. 9d. in fairly active dealings. Another factor is of interest to holders of South African shares. The Union note issue is now covered to 77.9 per cent by gold held in the South African Reserve Bank, and it seems possible that the authorities are holding out for a higher price before releasing it. During the last month there has been a general decline in the value of gold in the free markets of the world. While individual markets vary, the current price is between 9 per cent and 10 per cent below the peak level at the beginning of this year. This is attributed to a diminishing demand by hoarders, coupled with the fact that considerable quantities of South African "industrial" gold are now finding their way on to these markets by devious routes. West African shares showed small declines, and very quiet conditions are reported. The Ariston figures, and the increase in total annual dividends from 20 per cent to 30 per cent were a market talking point. A maintained interim dividend of 7½ per cent was also announced at the same time. The shares resisted the general trend and remained steady at 7s. 6d.

American tin buying restrictions continued to unsettle this section and all-round losses were the order of the day. Rumours that the U.S. authorities may take similar action to restrict the consumption of tungsten caused considerable falls in Beralt and Mawchi. In this connection an interesting announcement was made at the annual meeting of Falcon Mines in Bulawayo. On their Sunace property this company has demarcated a substantial area underground where the reef contains appreciable quantities of scheelite, one of the tungsten ores. Production is expected to start in the near future, and the chairman anticipates a useful addition to the revenue from the mine.

Dollar shares have been no exception to the general setback, but the annual statement by the chairman of International Nickel attracted favourable attention. He estimates that while rearmament continues, the demand for nickel and other metals produced by the company will easily absorb all that it can supply.

While the open pit workings are approaching exhaustion, good progress is reported with underground development. This is expected to be completed in 1953 and will provide capacity for hoisting 13,000,000 s.tons annually.

Earnings for 1950 amounted to $3.21 per share as against $2.08 for 1949. Market circles anticipate even higher profits for 1951. Dividends have been held to an annual total of $2 per share.

De Beers announced a final dividend and bonus, bringing the total distribution up to 110 per cent against 90 per cent last year. The deferred fell 2s., some holders being disappointed, but other shares in the group hardened on expectation of good results to come.

FINANCE	Price Mar. 14	+ or − on week
African & European	3 7/8	
Anglo American Corpn.	8 1/8	
Anglo-French	23/9xd	
Anglo Transvaal Consol.	41/3	−1/3
Camp Bird	14/3	−6d
Central Mining (71 shrs.)	48/9	
Consolidated Goldfields	2 1/8	− 1/8
Consol. Mines Selection	36/9	−1 1/4d
East Rand Consols	4/1 1/4	−1 1/2d
General Mining	6 1/8	− 1/8
H.E. Prop.	38/9	
Henderson's Transvaal	10/-	−3d
Johnnies	3 1/8	− 1/8
Rand Mines	7 1/8	− 1/8
Rand Selection	40/-	−1/3
Union Corporation	12	− 1/8
Vereeniging Estates	5 1/8	− 1/8
Writs	35/-	
West Wits.	2 1/16	− 1/16
RAND GOLD		
Blyvoors	53/6	−10 1/2d
Brakpan	22/3	−7 1/2d
City Deep	3 1/16	+ 1/16
Consol. Main Reef	2 1/16	
Crown	5 1/16	− 1/16
Daggas	3 1/8	− 1/8
Dominion Reefs	2/3	−4 1/2d
Doornfontein	31/3	−1/3
Durban Deep	4 1/8	− 1/8
E. Daggas	27/6	−7 1/2d
E. Geduld ... (4/- units)	2 1/8	
E. Rand Props.	4 1/8	− 1/8
Geduld	8	
Grootvlei	42/3	
Libanon	17/9	−9d
Luipaards Vlei	24/9	−3d
Marievale	23/3	−3d
Modderfontein B	6/3	
Modderfontein East	2 1/8	
New Kleinfontein	35/-	
New Pioneer	21/3	−3d
Randfontein	21/3	−3d
Robinson Deep	18/3	
Rose Deep	42/6	−1/3
Simmer & Jack	7/10 1/2	−1 1/2d
Springs	12/4 1/2	−9d
Sub Nigel	3 1/2	− 1/8
Van Dyk	18/3	−1/3
Venterspost	32/6	
Vlakfontein	21/6	−1/-
Vogelstruisbult	26/6	−9d
West Driefontein	5 1/16	− 1/16
W. Rand Consolidated	46/3	−1/10 1/2d
Western Reefs	40/-	−7 1/2d
O.F.S.		
Alpha F.S.A.	13/-	−3d
Blinkpoort	25/7 1/2	−3/1 1/2d
Central Mining F.S.	5/6	−3d
Freddies	17/3	−1/-
Freddies N.	11/-	−1 1/2d
Freddies S.	12/-	−1 1/2d
F.S. Geduld	3 1/16	− 1/8
Geoffries	17/3	−1/-
Harmony	24/6	−6d
Lydenburg Estates	11/3	−1/6
Middle Wits	21/6	−1/-
Ofsits	2 1/16	− 1/16
President Brand	24/3	−1/-
President Steyn	17/6	−1/6
St. Helena	35/-	−1/10 1/2d
U.F.S.C. & G.	10/3	−3d
Virginia Deb.	74/-	
Virginia Ord.	14/3	−6d
Welkom	45/-	−1/10 1/2d
Western Holdings	3 1/4	− 1/4
WEST AFRICAN GOLD		
Amalgamated Banket	2/1 1/2	−1 1/2d
Ariston	7/6	
Ashanti	29/-	−1/6
Bibiani	10/9	−9d
Bremang	3/6	−1 1/2d
G.C. Main Reef	4/-	
G.C. Selection Trust	9/-	−6d
Konongo	2/1 1/2	
Kwahu	4/7 1/2	−3d
London & African Mng.	2/4 1/2	−1 1/2d
Lyndhurst Deep	1/1 1/2	
Marlu	2/1 1/2	
Nanwa	1/-	−1 1/2d
Taquah & Abosso	8/-xd	
AUSTRALIAN GOLD		
Boulder Perseverance	4/3	−1 1/2d
Gold Mines of Kalgoorlie	16/-	
Great Boulder Prop.	7/-	−3d
Great Western Consol.	1/6	
Lake View and Star	22/-	
Mount Morgan	21/-	+1 1/2d
North Kalgurli	19/-	−3d
Paringa	1/-	
Sons of Gwalia	14/6	
South Kalgurli	10/-	−6d
Western Mining	7/-	
Wiluna	11/9	−3d
MISCELLANEOUS GOLD		
Cam and Motor	37/6	+7 1/2d
Champion Reef	12/9	+9d
Falcon Mines	11/6	+6d
Globe & Phoenix	25/6	
MISCELLANEOUS GOLD (contd)		
G.F. Rhodesian	9/-	
London & Rhodesian	5/7 1/2	−3d
Motapa	3/3	−6d
Mysore	8/-	+6d
New Guinea	2/-	+4 1/2d
Nundydroog	11/6	
Ooregum	4/9	
Oroville	13/-	−9d
St. John d'El Rey	3"/6	
Zams	33/1 1/2	−1/7 1/2
DIAMONDS		
Anglo American Inv.	4	+ 1/8
Casts	37/3	+1/6
Cons. Diam. of S.W.A.	3 1/2	+ 1/8
De Beers Defd. Bearer	55/6xd	−2/-
De Beers Pfd. Bearer	17 1/2	− 1/2
COPPER		
Chartered	64/9	−1/6
Indian Copper	4/10 1/2	−1 1/2d
Messina	5 1/2	+ 1/8
Nchanga	61/-	
Rhod. Anglo-American	56/9	−9d
Rhodesian Selection	35/9	−3d
Rhokana	19 1/2	− 1/2
Rio Tinto	22 1/2	− 1/2
Roan Antelope	18/4 1/2	−6d
Selection Trust	45/3	+3d
Tanks	41/3	−2/9
Tharsis Sulphur Br.	55/-	−1/3
TIN (Eastern)		
Anglo-Burma	6/6	−3d
Ayer Hitam	28/10 1/2	−1 1/2d
Bangrin	36/-	−1/6
Gopeng	14/7 1/2	−1/6
Hongkong	14/-	−10 1/2d
Ipoh	32/6	−1/10 1/2d
Kamunting	11/7 1/2	−7 1/2d
Kepong Dredging	14/-	−4 1/2d
Kinta Tin Mines	16/3	−2/-
Southern Kinta	4/9	
S. Malayan	31/-	−1/-
Malayan Dredging	26/6	
Pahang	16/-	−1/6
Pengkalen	10/9	−7 1/2d
Petaling	13/-	−1/3
Rambutan	20/-	−1/-
Siamese Tin	25/3	+3d
Southern Kinta	15/3	−1/-
S. Malayan	31/-	−1/6
S. Tronoh	23/9	−2/3
Sungei Kinta	20/-	
Tekka Taiping	12/-xd	
Tronoh	31/3	−2/3
TIN (Nigerian and Miscellaneous)		
Amalgamated Tin	12/4 1/2	−7 1/2d
Beralt Tin	23/6	−3/-
Bisichi	4/3	−4 1/2d
British Tin Inv.	16/7 1/2	−10 1/2d
Ex-Lands Nigeria	7/7 1/2	−7 1/2d
Geevor Tin	15/-	−2/3
Gold & Base Metal	4/-	−1 1/2d
Iantar Nigeria	7/9	−10 1/2d
Ios Tin Area	1/3	
Kaduna Prospectors	6/9	−6d
Kaduna Syndicate	14/6	−6d
London Tin	5/4 1/2	−3d
Ribon Valley	1/4 1/2	−1 1/2d
United Tin	2/7 1/2	
SILVER, LEAD, ZINC		
Broken Hill South	54/6	−6d
Burma Corporation	4/7 1/2	+3d
Consol. Zinc	30/3	−1/9
Lake George	27/-	+3d
Mining Trust	5/-	
Mount Isa	38/3	−3d
New Broken Hill	28/9	+6d
North Broken Hill	73/3	+1/3
Rhodesian Broken Hill	19/4 1/2	−6d
San Francisco Mines	58/1 1/2	−3/4 1/2
Trepca	3/7 1/2	
MISCELLANEOUS		
BASE METALS & COAL	3 1/8	
Amal. Collieries of S.A.	70/-	−3d
Associated Manganese	2/3	
Chinese Engineering	56/3	
C.P. Manganese	5 1/8	− 1/8
Natal Navigation	21/-	−6d
Wankie	4 1/8	
Witbank Colliery		
CANADIAN MINES		
Dome	$31	−1
Hudson Bay Mining	$114	−11
International Nickel	$72 1/2	−1 1/2
Mining Corpn. of Canada	£6 1/8	− 1/2
Noranda	$160	−5
Quemont	£9 1/8	− 1/2
OIL		
Anglo-Iranian	5 1/2	− 1/8
Apex	46/3	
Attock	25/-	−7 1/2d
Burmah	56/10 1/2	−3/9
Canadian Eagle Bearer	33/3	−10 1/2d
Mexican Eagle	23/7 1/2	−7 1/2d
Shell	4 1/8	− 1/8
Trinidad Leasehold	27/-	−6d
T.P.D.	32/-	−3d
Ultramar	36/7 1/2	−4 1/2d

Company News & Views

INCO's Higher Earnings and Metal Deliveries

Rearmament, with its consequent diversion of metals, has resulted in a dislocation of commercial markets during 1950, and while this situation obtains, there will be a need for all the nickel and other metals produced by the International Nickel Co. of Canada. Increased demand, especially since the outbreak of war in Korea, is reflected in an increase of over $16,000,000 in the group's net earnings, which amounted last year to $48,765,849, equivalent to $3.21 per common share ($32,252,314 or $2.08 in 1949 and $39,108,404 or $2.55 in 1948).

In the report—which includes a tribute to the late Robert C. Stanley—Dr. Thompson, the chairman and president notes that "the free world has overwhelming nickel superiority in the current crisis." The company delivered, in 1950, 256,410,543 lb. of nickel in all forms (compared with 209,292,257 lb. and 240,098,274 lb. in 1949 and 1948, respectively)—more than in any peace-time year. Deliveries of platinum metal totalled 267,316 oz. (214,735 and 199,560); moreover, it delivered 212,947,394 lb. of refined copper (221,075,080 and 219,130,830) and also gold, silver, selenium, tellurium and cobalt. Proven ore reserves at the year-end stood at 252,859,725 s.tons (251,805,157 in 1949, and 246,176,683 in 1948). The nickel-copper content at the year-end was 7,669,219 s.tons (7,630,009 in 1949 and 7,503,058 in 1948).

To provide these larger supplies of nickel, the company brought into operation an additional blast furnace at its Coniston smelter and an additional reverberatory furnace at its Copper Cliff smelter. With the outbreak of hostilities in Korea, the programme under way for new underground mining capacity was supplemented by an emergency project to provide temporary greater capacity at the mines, concentrating mills and smelters.

While dealing with these changed conditions, the company continued to drive towards the completion of its paramount project of replacing the capacity of its open pit surface mines, which are rapidly approaching exhaustion, with large additional underground capacity. During the year, it spent $18,683,606 on capital improvements. Length of underground development in the operating mines totalled over 283 miles. Capital expenditure for 1951 is estimated at $20,000,000. The underground undertaking, when completed in 1953, will provide a capacity for hoisting more than 13,000,000 s.tons of ore annually.

As regards individual projects, the report states that the Murray mine, which has been under long and active development, was brought to a regular production basis. At the year-end it was producing approximately 4,500 tons daily, compared with 500 tons at the beginning of the period. The main shafts at our Garson, Murray and Levack mines are being deepened a combined total of 3,700 ft. Simultaneously, the company is in the course of sinking three entirely new shafts at Creighton mine, Levack mine and the Stobie section of the Frood-Stobie mine. It has also completed major alterations in the Frood section, which permit the abandonment of an old shaft and make possible the recovery of several million tons of ore by low-cost surface mining. A large portion of the company's open pit to underground mine transition programme is the preparation, at the Creighton mine, for mining the lower-grade ores which have now become economical through the development of low-cost block-caving methods of mining. Construction proceeded throughout the year on the permanent Creighton hoist house, the mill buildings and the pipelines for transporting the bulk concentrate 7½ miles to Copper Cliff. The original planned capacity of the concentrator was enlarged substantially and the first unit, consisting of two mills, has already come into preliminary operation. A total of four units will be completed by the year-end, which will provide rated capacity of upwards of 10,000 tons daily.

Successful Year for Consolidated Mines Selection

Last year was an eventful and highly successful one for Consolidated Mines Selection Company, one of the smaller mining finance "houses" within the orbit of the Anglo American Corporation group. Issued capital was increased from £700,000 to £900,000 by the offer of 400,000 reserve shares at 27s. 6d., of which stockholders were offered 350,000 shares in the ratio of one for every four held. Hamburg Bank, the underwriters, subscribed firm for the remaining 50,000 on the same terms as stockholders, no underwriting commission being charged.

The profit and loss account showed that gross revenue amounted to £323,141 against £228,636, due chiefly to income from dividends and interest which at £284,855 was more than double the £141,214 received last year. This item was abnormally swollen by non-recurring receipts and also by two dividends from Anglo American Corporation instead of the customary single one.

Administrative expenses increased by some £8,000 to £16,190—the result of an agreement between the company and its secretaries, the Anglo American Corporation of South Africa, whereby the fixed annual fee for such services was raised to meet increased cost. To the net profit of £305,795 (£220,207) was added £41,032 brought in, making £346,827 available. Taxation required £122,996 (£100,771), the sum of £50,000 against £30,000 was transferred to general reserve, dividend payments aggregating 25 per cent on the increased capital absorbed a net amount of £13,500, leaving the carry forward slightly reduced at £36,581 against £41,032 previously.

Although the company's investment portfolio remains substantially unchanged, its holding in De Beers Consolidated was replaced by an increased holding in Anglo American Investment Trust, a substantial interest was acquired in Orange Free State Land and Estate Company (Proprietary), and the company's former small holding in Coart Products, South Africa, Ltd., was greatly added to. Tanganyika Concessions also appears on the list as one of the principal holdings at December 31, 1950.

The receipt of £550,000 from the share issue has improved further the company's cash position, and the directors state that the cash surplus available will be invested when favourable opportunities occur. The company is broadening its interests in the O.F.S. goldfields so that the "cash surplus" might well find its way into this new goldfield rather than into revenue producers.

Selayang Tin pays 30 per cent

For the year ended September 30, 1950, Selayang Tin Dredging's gross revenue amounted to £103,428 (£99,608) and after deducting all expenses, net profit came out at £24,020 compared with £27,263 in 1949. To the net figure was added £1,640 brought in and £1,705 arising from leave pay provision not required, making £27,365 available. Taxation was heavier at £14,541 (£8,850), though the amounts written off property account totalling £4,000 were considerably less than that provided for this purpose last year which amounted to £15,329. Dividend payments aggregated 30 per cent (40 per cent) absorbing a net amount of £7,219 and the balance remaining, £1,605, was carried forward compared with £1,640 previously.

During the first five months of the current year ended February 28, 1951, tin concentrates recovered totalled 110 tons, equivalent to the same rate of output as in 1950 when 265 tons tin concentrates were won. However, the enhanced price of tin has yielded the company an estimated profit during these five months of £45,000

and the directors have decided that shareholders should benefit immediately. Accordingly an interim dividend in respect of 1951 has been declared which is to be paid with the final (10 per cent) in respect of 1950.

The company's war damage compensation has been provisionally assessed at £30,546 and a payment of 60 per cent of this sum, amounting to £18,328, has been credited against the loan made to the company of £40,367, leaving a balance due to the Malayan Government of £9,821.

The Chartered Bank of India, Australia and China

The total of the balance sheet of the Chartered Bank of India, Australia and China as at December 31, 1950, at £193,602,640 is the largest in the bank's history and is £42,082,196 greater than last year's total. This advance reflects not only the size of the expansion in the volume of business handled by the bank but also, according to Mr. Vincent Alpe Grantham, chairman, the inflated prices of the many commodities the bank is called upon to finance in the daily conduct of its affairs.

Of the seventeen territories, apart from the United Kingdom, which the bank's organization serves, many have received either sovereign independence or a large measure of political autonomy since the war and in most cases this has brought about a change of environment beyond all former recognition. Notwithstanding these changes and the chairman's own remarks last year concerning a general deterioration in working conditions in almost every eastern country in which the bank operates, the balance sheet figures as shown above reveal a substantial increase in business. This increase is also reflected in the larger net returns and last year net profit increased by £117,215 to £632,807. This good result is matched by the news that the bank has completely recovered from the serious losses suffered during the war when more than 75 per cent of its offices were overrun by the enemy.

Accordingly, a return to the rate of dividend paid before the war, namely 14 per cent on the £3,000,000 issued capital, is proposed compared with 12 per cent paid last year.

The National Bank of India

Mr. J. K. Michie, chairman of the National Bank of India, reminds us of the great responsibility undertaken by the banks, especially under conditions where taxation of commercial profits is so high that an altogether disproportionate share of the burden of financing highly priced goods is being placed on the shoulders of banking. Commenting on the consistently rising prices of some commodities such as jute, rubber, sisal and coffee, which have risen to ten and twelve times their 1938 prices, he states that the expansion of capital in the hands of commerce has not kept pace with this inflation and that it is therefore imperative for the bank to direct its resources into sound business and to discourage operations which are purely speculative.

As at December 31, 1950, the balance sheet total reached a new peak at £109,970,762 compared with £92,972,507 previously. Deposits also expanded by £17,311,149 and advances by £3,604,982 while the bank's consolidated balance sheet total showed an equally satisfactory increase rising to £133,404,121 compared with £114,559,065 in 1949. From net profit, which amounted to £361,957 against £354,500, £100,000 (£50,000) was allotted to premises account, £60,000 to the reserve fund, (which amount together with £40,000 transferred from inner reserves brings this fund's total to £3,600,000) and, finally the carry forward was increased by £25,205 to £313,820.

The Mercantile Bank of India

The immediate effect of the international tension and the war in Korea was, said Sir Charles Innes in his statement accompanying the bank's annual report, to create a somewhat hectic prosperity in many of the countries in which the Mercantile Bank of India had branches. But while the rise in commodity prices has materially helped to alleviate the dollar shortage and to improve the position of sterling, the high level of commodity prices has given an unwelcome impetus to inflation and this is probably the gravest problem confronting Far Eastern governments to-day.

The boom in commodities has had its direct effect on the bank and its accounts for the year ended December 31, 1950, showed that the bank's reserve funds now stand at £1,350,000, or £300,000 in excess of the bank's paid-up capital while deposits increased to £67,000,000 against £54,000,000 in 1949. On the assets side, the outstanding features are an increase of nearly £7,000,000 in bills and £4,500,000 in loans and advances. These increases, the chairman said, are the direct result of the very much higher commodity prices which prevailed during the second half of the year.

A well-balanced survey of the conditions in India and Pakistan was given by Sir Charles with special reference to the benefits accruing to both countries from the recently concluded Trade Agreement, and he summed up the hopes of everyone when he stated that "one can only hope that the two governments will settle outstanding political issues, especially that of Kashmir, in the same realistic spirit with which they have dealt with their economic difficulties."

Company Shorts

Stilfontein Gold Mining announce that in sinking the Margaret shaft, the Ventersdorp Contact Reef has been intersected at 1,475 ft. The reef has been sampled at 5 ft. intervals around the perimeter. The average sample assayed 5.20 dwt. over 30 in. (156 in.-dwt.), and over 50 ft. at the northern end of the shaft, the average was as high as 8.26 dwt. over 31.2 in. (258 in.-dwt).

Ariston Gold Mines (1929) Ltd.—According to preliminary figures, total revenue of this company for the year to September 30, 1950, increased from £853,960 to £1,267,772. Net profit rose to £495,705 (£246,375), with taxation absorbing £246,163 as compared with only £97,000 in the previous year.

A final dividend of 15 per cent (same) is to be paid, making, with the two interim dividends of 7½ per cent each, a total distribution of 30 per cent (20 per cent), less tax, on the capital of £1,125,000.

Ashanti and Bibiani Pay Higher Dividends.—Ashanti Goldfields Corporation has declared a final dividend of 1s. 6d. per 5s. unit, making a total distribution of 62½ per cent (as compared with 40 per cent) for the year to September 30, 1950. Profits increased from £412,532 for 1948-49 to £621,570 after tax of £449,825 (£253,571). The reserve fund receives £175,000 (£100,000), and £25,000 (same) is again allocated to assets replacement reserve. Profit, after tax, made by Bibiani (1927) for the year ended September 30, 1950, amounts to £159,559 (£63,300) and includes a £23,500 claim in respect of loss of output. Taxation absorbs £141,000 (£10,000). Allocation to general reserve amounted to £60,000 (nil), and to assets replacement reserve £25,000 (same). A final dividend has been announced of 7.2d. per 4s. unit, less tax, making a total of 25 per cent (12½ per cent).

De Beers Consolidated Mines Ltd., report a net profit for 1950 of £7,880,684 after providing £2,500,000 for taxation, an increase of £2,189,116 over 1949, when £1,525,000 was absorbed by taxation. These higher earnings are a reflection of the increased volume of sales of rough stones by the central selling organization, amounting to £51,000,000, a new high compared with £28,400,000 in 1949.

A final dividend of 1s. 6d. per share (same) and a bonus of 2s. 6d. per share have been declared for the year ended December 31, 1950, making, with the interim, a total of 5s. 6d. as compared with 4s. 6d. for the previous year, payable to shareholders registered as at March 31, 1951.

THE CONSOLIDATED MINES SELECTION COMPANY, LTD.

ABRIDGED REPORT OF THE DIRECTORS FOR THE YEAR ENDED DECEMBER 31st, 1950.

CAPITAL

The authorized capital remained unchanged at £900,000. The issued capital was increased during the year to that amount by the issue of the 400,000 reserve shares at 27s. 6d. per share, Stockholders being offered 350,000 of these shares. Underwriters subscribed firm for the balance of 50,000 shares at the issue price of 27s. 6d., and as a result of this issue, the Company has received £550,000 of new capital.

It is proposed to submit, as special business, at the Annual General Meeting a resolution to increase the authorized capital of the Company to £1,200,000 by creating 600,000 new Ordinary shares of 10s. each and empowering the Directors to issue these shares on such terms and conditions as they may think fit. Your directors have no present intention of issuing additional capital, but feel that it is desirable in the interests of the Company that there be some reserve shares available for issue at short notice without the delay involved in calling Extra-ordinary General Meetings either to increase the authorized capital or to obtain authority for a new issue.

NEW ARTICLES OF ASSOCIATION

A Special Resolution will be submitted at the Annual General Meeting for the adoption of new Articles of Association. The existing Articles were adopted in 1910 and apart from the need to make certain specific alterations to the Articles on such matters as borrowing powers and Directors' remuneration it is considered desirable to recast the Articles so that they will be in conformity with the requirements of the Companies Act, 1948 and modern practice generally.

A print of the new Articles may be inspected at the office of the Company during usual business hours prior to the Meeting.

ACCOUNTS	1950	1949
	£	£
Profit after charging all expenses but before providing for taxation was	305,795	220,207
Add: Unappropriated Profit brought forward	41,032	41,284
Making a total of	346,827	261,491
Deduct: Taxation—United Kingdom and South African	122,996	100,771
	223,831	160,720
Deduct: Amount transferred to General Reserve	50,000	30,000
	173,831	130,720
Deduct: Proposed Dividend of 15% and Bonus of 10% (less Income Tax) and Directors' Additional Remuneration	137,250	—
(Dividend of 21¼% (less Income Tax) and Directors' Additional Remuneration	—	89,688
Unappropriated Profits carried forward	£36,581	£41,032

The profit shows a satisfactory increase and your Board feels justified in recommending a small increase in distribution. At the same time they propose to divide the total of 2s. 6d. per stock unit into a dividend of 1s. 6d. and a bonus of 1s. Profits of a business such as that of your Company are liable to vary substantially from year to year, being dependent on dividends from mining companies, sharedealing and underwriting. Revenue from dividends and interest can be looked on as reasonably dependable and so far as the Directors can see should be sufficiene to maintain a distribution of 1s. 6d. per stock unit. The balanct represented by the 1s. bonus can be regarded as accruing from other sources of profit.

In the year under review the figure of £284,855 representing Dividends and Interest received is abnormally high due to certain non-recurring receipts. The Anglo American Corporation of South Africa, Limited, in which your Company maintains a large holding, has for the first time adopted the practice of paying an interim dividend; thus during our financial year 1950, the Anglo American Corporation dividend of 6s. in respect of 1949 and an interim of 2s. for 1950 were both received. Certain other exceptional receipts from other companies are also included. For 1951 your Directors do not expect to receive more than about £180,000 from dividends on our present shareholdings but this estimate must be subject to the usual uncertainties inseparable from mining enterprises. Your Company now has a substantial cash surplus available for investment as and when favourable opportunities occur and to the extent that this is invested in revenue producing shares income will, of course, be augmented.

The year under review was not favourable for sharedealing and revenue from that source is considerably lower. Income from underwriting has shown a tendency to rise and every effort is being made to develop this branch of our business.

The Balance Sheet reflects the improved cash position of the Company resulting from the receipt of £550,000 from the issue of 400,000 shares at 27s. 6d. each. There were, however, contingent liabilities amounting to £465,969, but of this amount £150,000 has since given rise to an actual liability of approximately £18,000. The bulk of the remainder, namely, £200,000, is an underwriting commitment in respect of 5 per cent. Registered Unsecured Convertible Notes of President Steyn Gold Mining Company, Limited, which are under option until April, 1952.

An amount of £73,152 has been written off certain shareholdings, reducing the balance of the Investments Reserve from £89,404 to £16,252. This particular reserve was originally created by writing up certain investments either to cost or to their then market value in accordance with the provisions of the Companies Act, 1948. In the circumstances your Board does not propose to make any special provision to maintain the balance on this reserve. We have, however, appropriated £50,000 to General Reserve, bringing it up to £250,000 and resulting in a small reduction in the balance of unappropriated profit carried forward.

INVESTMENTS

These remain substantially unchanged. The holding in De Beers has been disposed of and replaced by an increased holding in Anglo American Investment Trust, Limited. A substantial holding has been acquired in Orange Free State Land and Estate Company (Proprietary), Limited, a company with extensive properties in and around the Orange Free State goldfield. The holding in Boart Products, South Africa, Limited, was previously felt to be too small to be specifically mentioned. This company has now expanded its operations and has begun to pay satisfactory dividends.

Although time must still elapse before our investments in the Orange Free State begin to yield income, we are satisfied that our participation in the finance of this important new goldfield will prove to be highly profitable.

The fifty-fifth annual general meeting of members will be held at The Chartered Insurance Institute, 20, Aldermanbury, London, E.C.2, on April 3, 1951, at 12.30 p.m Copies of the full Report and Accounts may be obtained on application to the Company's Office, 11, Old Jewry, London, E.C.2.

RAND SELECTION CORPORATION

SUBSTANTIALLY INCREASED DIVIDENDS FROM PRODUCING GOLD MINES

The Fifty-ninth Annual General Meeting of Rand Selection Corporation, Ltd., was held recently in Johannesburg.

The Hon. H. V. Smith, the Chairman, presided, and in the course of his review, said:

The revenue for the year was £698,000 as against £532,000 in the previous year. This increase of £166,000 is largely attributable to sterling devaluation and the resultant increased dividends from our investments in producing gold mines.

The net profit for the year was £626,000, as against £537,000, and was arrived at after writing off the discount and issue expenses of £33,000 on the £1,000,000 of loan stock issued in September. This, added to last year's unappropriated balance of £204,000, gave a total of £830,000. Provision for taxation amounted to £60,000, as against £50,000 last year, and the dividend of 2s. per share absorbed a further £450,000. After deduction of £3,000 in respect of directors' additional remuneration, there remained £317,000 to be carried to the balance-sheet. The general reserve remains unchanged at £2,150,000.

During the year your Board decided to make an issue of £1,000,000 4½ per cent 10 year Unsecured Loan Stock repayable in 1960. The purpose of this was to provide additional funds to enable your corporation to participate with Anglo American Corporation of South Africa Ltd., in any new business which the latter corporation may undertake, and also to assist in the provision of funds required for new mining enterprises in the Orange Free State and on the West Rand. These notes were laced privately in the United Kingdom at £97 per cent. No application was made for quotation of the loan stock on any stock exchange. The interest payment is to be paid half-yearly on March 31 and September 30.

GOLD MINING INTERESTS

The increased revenue of the mines arising from devaluation was offset to some extent by the increased benefits granted to employees and the greater cost of raw matrials.

The Corporation has retained its interest in the gold-mining companies of the Far West Rand through its holding in West Rand Investment Trust, Ltd. This company declared an interim dividend in June, and has recently declared a final dividend of 7½d. per share, making 1s. 1½d. for the year as against 9d. for the previous year.

Through its large shareholdings in Orange Free Investment Trust, Ltd., and South African Mines Selection, Ltd., and by direct shareholdings in the mining companies, your corporation continues to be substantially interested in the new Free State mines. Your Board, however, considers it desirable to increase our investments in this field and have decided on a plan to achieve this, which I shall refer to later. Considering the difficulties encountered, the progress made on the opening up of the mines in this area must be regarded as satisfactory.

As anticipated in my speech last year, Loraine Gold Mines, Ltd., was formed towards the end of 1950 to take cession of the lease over the western portion of the Wit. Extensions block. Orange Free State Investment Trust, Ltd., is entitled to subscribe a large proportion of the initially issued capital of the new company, which will consist of 6,000,000 shares of 10s. each. Orange Free State Investment Trust, Ltd., has announced that 1,600,000 of the shares which it is entitled to subscribe will be offered to shareholders in the proportion of one Loraine share for every five Orange Free State Investment Trust shares held. Your corporation will thus acquire direct and indirect interests in Loraine Gold Mines Ltd.

RHODESIAN INTERESTS

The Corporation retains its interest in the Rhodesian base-metal mining industry, through its large holdings in Rhodesian Anglo American, Ltd., and to a lesser degree through direct shareholdings in the mining companies.

Despite the fact that mining operations were hampered by shortages in available supplies of coal, the Northern Rhodesian mines had a very satisfactory year.

Since the end of our financial year the prices of base metals have continued to rise and, if these prices hold, we can look forward to further increased revenue from our investment in Rhodesian Anglo American, Ltd.

Anglo American Investment Trust, Ltd., declared dividends for the year 1950 amounting to 7s. per share. The sale of diamonds in 1950 exceeded all expectations, with the record figure of £50,976,000 for total gem and industrial sales. This is £12,000,000 higher than any previous year's total.

There is every indication at present that 1951 will prove another boom year for the diamond industry.

Your Board has been anxious for some time past to increase the corporation's holding in the developing mines of the Orange Free State, and it has been decided to make an offer to South African Townships shareholders to exchange their shares for Rand Selection shares on the basis of one Rand Selection share for every two South African Townships shares held.

The report was adopted.

THE NATIONAL BANK OF INDIA

ANOTHER YEAR OF EXPANDING BUSINESS

The Annual General Meeting of The National Bank of India, Ltd., will be held on April 3 in the bank's premises at 24, Bishopsgate, London, E.C.

The following is an extract from the statement by the chairman, **Mr. J. K. Michie,** which has been circulated to shareholders with the report and accounts for the year ended December 31, 1950:

The total of our balance sheet reaches a new peak at £109,970,762, the comparable figure for last year being £92,972,507. Deposits have risen by £17,311,149, and advances by £3,604,982.

Our consolidated balance sheet total shows an equally satisfactory increase, the figure being £133,404,121, as against £114,559,065 last year.

After making full provision for taxation, bad and doubtful debts, and other necessary reservations, including an appropriation to the staff pension fund, which previously has been shown as a separate item in the profit and loss account, our net profits are £361,957, against the comparable figure for 1949 of £354,500. Considering that working expenses continue to go up the result is satisfactory.

During the past year we have opened up five new branches and sub-branches, and under the authority of the respective central banks we shall shortly open branches at Bangalore, in Southern India, and at Khulna, which will serve the new port of Chalna in East Pakistan. We have also arranged to open a branch at Fort Portal, in Uganda. Our further programme of extensions oversea is held back only by the difficulty of recruiting trained staff in step with our needs.

We have another and more local development in train. Provisional arrangements have been made to lease a very suitable building in St. James's Square at one time known as Windham's Club, and we hope to open a West End branch there sometime this year. Not only will this additional office enable us to offer our constituents better service in London, but it will relieve the increasing pressure on space in our Head Office. As soon as this can be done our customers will be advised of the opening date and of the services that will be available.

Last year was one in which many adjustments had to be made, for the major effects of the devaluations of certain currencies carried out in September, 1949, did not begin to emerge until 1950 while more recently the world-wide programmes of rearmament have added further impetus to the inflationary trend which devaluation had already accentuated. Industrialists and merchants, and not least bankers, have had to face the problem of financing stocks and shipments of goods at consistently rising prices until to-day the whole financial machinery is under strain. Taxation of commercial profits is so high that an altogether disproportionate share of the burden of financing highly priced goods is being placed on the shoulders of banking.

During 1950, India had much to contend with in her struggle for self-sufficiency in food and economic equilibrium. The disastrous earthquakes and floods in Assam which damaged so many tea estates, and the droughts elsewhere were sore blows to India's hopes and, while the tea industry has made a wonderful recovery, India's deficit in foodstuffs in 1951 is estimated at not less than 2,000,000 tons and may be much more.

In several of his annual statements my predecessor drew attention to the patent fact that an adequate food supply is the first necessity for India and that until this is ensured no general industrial expansion can be safely or successfully pursued.

An unfortunate repercussion of the difficulties India's economy is having to face is the increase in taxation which the Finance Minister, Sir Chintaman Deshmukh, has just announced. I have no doubt he regrets as much as we do the necessity for reversing the policy of reducing direct taxation inaugurated by his Government last year.

The economy of Pakistan has recently been much strengthened by the rise in the prices of jute, cotton, hides and wool, of which she is a large exporter. Her food position both in East and West Pakistan is also satisfactory.

Ceylon has had a prosperous year and a balanced budget, for prices of tea, rubber and copra have been buoyant. The State Bank of Ceylon was formally opened on August 28, 1950. We welcome the establishment of this Central Bank which should be of great benefit to the banking community, particularly with regard to the opportunities it gives of obtaining immediate cover for foreign exchange operations when such is necessary. The news from Burma, I am glad to say, is of an improvement in conditions both political and economic. In a country of such bountiful natural agricultural and mineral wealth all that has been wanted to set Burma on the road towards prosperity was internal peace and security.

This year it is believed a total export of over 1,250,000 tons

of rice will be reached and as prices have risen this will mean a large addition to Burma's revenue and to her earnings of foreign exchange. All she can produce is badly wanted.

Before I leave the Asian field mention should be made of that product of Commonwealth statemanship known as the Colombo Plan, the outcome of a conference held in London in September last. It is hoped to find and put at the disposal of certain countries of South East Asia, for the development of their agriculture and other natural resources, over a period of the next six years, the vast sum of over £1,000,000,000. The idea is that the necessary funds should be found in part by releases from the sterling balances held by the countries concerned, partly by private investors, partly by international institutions such as the International Bank for Reconstruction and Development, and partly by loans from overseas governments to the governments of the receiving countries. At the moment the gap between the estimated cost of the schemes put forward and the funds estimated to be available, is £600,000,000, so without help from the United States the plan cannot possibly be brought to fruition.

A conference has just been held in Colombo to discuss the practical aspect of the plan, at which the United States was represented. I hope this is an augury that she will yet see her way to co-operate in spite of her other large commitments.

Taxation is a subject on which we shall hear more in the near future and that is not likely to be to our advantage. To take from commerce and industry well over 50 per cent of their earnings is in itself destructive and is surely beyond the dreams of even the most somnolent of sleeping partners.

Much is written about incentives to labour and management —if not to capital—and it has to be accepted that defence must be prepared for and paid for, but the best encouragement I can think of would be for taxpayers of all categories to be able to recognize in the spending of the money which they earn and governments collect, the same care and prudence which these governments are so anxious to see exercised by their economic slaves and which the taxpayers willy nilly must impose on themselves.

The myth that devaluation is not necessarily inflationary is now exploded and the period of apparent financial betterment that follows a devaluation is over. We and other countries similarly placed have again to face selling in the same currency value as that in which we buy, and, failing increased productivity, the same old gap will yawn in front of us. It is already coming into view.

Provided nothing cataclysmic happens in world affairs or in commodity markets—and the two are not necessarily synonymous—our prospects for 1951 are quite favourable but, I repeat, the higher prices go to the greater the danger and the greater the anxieties of responsible bankers.

THE CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA

The Ninety-seventh Ordinary General Meeting of the stockholders of the Chartered Bank of India, Australia and China, will be held at 38, Bishopsgate, London, E.C.2, on April 4.

The following is an extract from the statement by the chairman, **Mr. Vincent Alpe Grantham,** which was circulated with the report and accounts for the year ended December 31 last:

The accounts indicate the continued expansion of the Bank's business, and this year we have again to deal with record figures. The total of the balance sheet at £193,602,640, the largest we have ever been able to show in the entire life of the Bank, is £42,082,196 greater than last year, and reflects not only a large expansion in the volume of the Bank's business, but also the inflated prices of many of the commodities we are constantly called upon to finance in the daily conduct of our affairs.

The net profits for the year are £632,807, an increase of £117,215 over those of last year. In my speech last year I referred to a general deterioration in working conditions in almost every Eastern country in which the Bank operates. These conditions have persisted and there has also been a further rise in working costs. But, as our balance sheet figures show, our business has substantially increased and this increase is naturally reflected in the larger net returns. We must be prepared, I think, from now on, for diminishing net returns.

We paid an interim dividend in September last of 6 per cent, less income tax, absorbing £99,000. We now feel that we can reasonably return to an annual rate of distribution of 14 per cent, which was the level of dividend paid by this Bank before the war for a great many years. With the exception of China, our branches are now all working again and several new branches have been opened. We have completely recovered from the serious losses suffered during the war when more than three-fourths of the Bank's offices were overrun by the enemy, and our business fully justifies a return to the old rate of dividend.

It is therefore proposed that, out of the balance available for distribution this year, a final dividend of 8 per cent, less income tax, be paid, costing £132,000, making the total distribution for 1950 fourteen per cent.

During the last ten years our balance sheet total has increased out of all proportion to the issued capital stock and reserve fund. In 1931 we had to make an allocation of £1,000,000 from the reserve fund to provide for exceptional losses in exchange due to this country going off the gold standard. We have this year restored this fund to its original figure of £4,000,000 by a transfer from contingencies.

In the first year of its existence as an independent sovereign republic, India has encountered many vicissitudes, but while the economic health of the nation has suffered severe setbacks, it is encouraging to note that the main problems in the economic field are being tackled with energy and understanding. The many difficulties inherent in the economy of a nation of some 350,000,000 people, have been increased by a series of natural calamities, for earthquakes, floods and drought have, in turn, seriously interfered with agricultural production in the home field, and for food—the provision of which in adequate quantities is, of course, a problem of the first magnitude —India has been thrown on the mercy of foreign growers to an extent greater than ever before, perhaps, to obtain her ever-increasing requirements.

Pakistan became on July 5 a fully fledged member of the International Monetary Fund and of the World Bank. Its economic and financial position is fundamentally sound in spite of the high level of expenditure on defence.

Ceylon.—Ceylon has again enjoyed a fair measure of prosperity and there has been a continuance and enhancement of the good world markets prevailing last year for all its main products.

Malaya.—It can be categorically stated that Malaya has had the most prosperous year in her history from the point of view of trade. Nevertheless, trading conditions have not been free from difficulties and uncertainty due to the mounting political tension in the Far East, the continuance of banditry on a wide scale in Malaya, the sharp rise in the price of tin, and the phenomenal advances and fluctuations in the price of rubber.

In the result a heavy price is being paid, especially by planters and miners, to maintain a constant flow of tin and rubber which contributes so high a proportion of United States dollars to the Empire pool. To them also, Malaya owes thanks for having been able to close the year with an overall surplus in visible trade, the first since the war, of no less than Straits $1,066,000,000 (£124,370,000) against a deficit for 1949 of some Straits $162,500,000 (£18,960,000).

Sarawak has had a peaceful year and has received its full share of high rubber prices and of a good demand for its timber and other produce, though at the expense of the vital needs of local paddy cultivation. In these conditions the Government were able to increase their revenue by raising import duties and the export taxes on rubber and produce. Trade figures, though not available to me at the time of writing, may be expected to be much higher than for 1949.

In Sarawak, as in North Borneo, the year has been one of quiet and steady progress.

Thailand.—The prosperity that has come to the country shows no signs of abating under present conditions. The prospects for next season's rice crop are good and, if officialdom restrains rather than increases its activities in the commercial world, Thailand should move forward to even greater financial and economic stability.

Indonesia.—The young Republic of Indonesia entered the year 1950 in a state of internal inflation and with an external deficiency but with the hope that those intangible factors, independence and self government, would effect that increase in production of primary products necessary for the economic survival of the then Federation.

That hope for more exportable goods and for increased crops to reduce food imports might have been fully justified had it not been for the deliberately obstructive tactics employed by labour, but in spite of a number of costly and unwarranted strikes, a remarkable change for the better took place in the Republic's financial and economic position during the year.

The financial recovery started with the introduction in March of two measures: a forced loan which converted roughly half the money in circulation into a long-term State loan and the other a complicated form of devaluation designed to promote exports at the expense of imports.

The Philippine Republic.—The conclusions of the Economic Survey Mission appointed by President Truman to study the economic and financial problems of the Philippine Republic leave no doubt that the Philippines have reached their economic cross-roads and, unless the Government and the people are prepared by sacrifices all round to take the hard way that leads to increased output and fair wages and to eschew many luxuries, recovery will be long delayed and an intervening period of serious inflation, political trouble and danger to law and order may ensue.

An interesting aspect of the trade of the Philippines during 1950 was a trend, although slight, from United States to European markets.

China.—Various methods have been used by the People's Government to revive external trade. The latest schemes amount to pure barter, imports into China having to arrive before the corresponding exports, completing the deal, are allowed to be shipped. This development followed the freezing of funds in the United States belonging to Chinese residents and may have its origin in the fear that other nations will adopt the same policy.

Apart from foreign trade, undoubted progress has been made by the People's Government in stabilizing the currency, and in improving communications within the country while, still more important, it would appear that the supplies of food-grains produced have been increased to an extent which, in a normally productive year, should suffice for the needs of the country without the aid of imports from outside.

These are solid achievements and might augur well for the future if the People's Government decided to confine their activities to internal affairs, which we have read it is their dearest wish to improve.

May it so come to pass.

Japan.—During the year under review further steps have been taken to place the Japanese economy and the conduct of overseas trade on a more normal basis. The Supreme Commander Allied Powers (SCAP), whilst still retaining responsibility, has handed over the management of overseas trade to the various Japanese official organizations in anticipation of the signing of a Peace Treaty.

Last year I thought that greater assistance would be required from the West if some of the countries in the Far East were to be saved from disintegration. Since then this has been realized, not alone by that great and generous nation, the United States of America, but by all the Commonwealth Nations who in the Colombo Plan have taken an enlightened co operative step toward self-help which is unique in the history of nations. In spite of the serious developments in the Far East and the parlous position in several of the countries in which this Bank operates, progress has not been lacking, and as for the working of the Bank, my belief last year that in spite of uncertainties on every hand, the Bank would continue to play a notable part in the furtherance of trade in the areas it serves, has been fulfilled.

The Chartered Bank of India, Australia and China

(INCORPORATED BY ROYAL CHARTER, 1853)

CAPITAL, STOCK, Authorised and Issued - - - - - £3,000,000
RESERVE FUND - - - - - - £4,000,000

Head Office: 38, BISHOPSGATE, E.C.2.
West End Branch: 28, CHARLES II STREET, HAYMARKET, S.W.1.
Manchester Branch: 52/54, MOSLEY STREET, MANCHESTER, 2.
Liverpool Branch: 27, DERBY HOUSE, EXCHANGE BUILDINGS, LIVERPOOL, 2.

BALANCE SHEET, 31st DECEMBER, 1950

	£	£	1949 £	£
CAPITAL—				
Stock authorised and issued	3,000,000		3,000,000	
(There is under the Charter a reserve liability of the Stockholders equal to the amount of Stock issued).				
RESERVE FUND	4,000,000		3,000,000	
PROFIT AND LOSS ACCOUNT	385,836		409,029	
		7,385,836		6,409,029
CURRENT AND OTHER ACCOUNTS, including Reserves for Contingencies, Taxation on profits to date, and Exchange Adjustments	150,204,804		116,383,980	
FIXED DEPOSITS	16,038,240		13,085,207	
NOTES IN CIRCULATION against Security per contra	3,000,527		3,011,770	
BILLS PAYABLE	1,863,904		898,808	
LOANS PAYABLE	1,234,902		200,000	
DEPOSITS BY NOMINEE SUBSIDIARIES	381		381	
DEPOSIT BY TRUSTEE SUBSIDIARY	4,544		1,800	
PROPOSED FINAL DIVIDEND, less Income Tax	132,000		99,000	
ACCEPTANCES, including undertakings to accept, on account of Customers	13,757,502		11,420,469	
		186,236,804		145,111,415
		£193,602,640		£151,520,444

NOTES:—

(1) There are contingent liabilities on Bills re-discounted £14,129,629 (1949, £5,003,853) (of which £11,257,359 has run off at 5th March, 1951) and commitments in respect of Confirmed Credits, Guarantees and Forward Exchange Contracts.

(2) Contracts for outstanding capital expenditure on premises amount to approximately £151,000 (1949, £323,000).

(3) Assets and Liabilities in foreign currencies have been converted into sterling at approximately the rates of exchange ruling on 31st December, 1950.

(4) Under Part III of the Eighth Schedule to the Companies Act, 1948, the Bank is exempted from showing the aggregate amount of its reserves and the movements therein.

	£	£	1949 £	£
CURRENT ASSETS—				
CASH IN HAND, AT CALL AND AT BANKERS		31,430,977		25,994,576
GOVERNMENT AND OTHER SECURITIES at Market Value—				
Quoted on London Stock Exchange	44,964,185		38,939,710	
Quoted on Overseas Stock Exchanges	7,779,959		7,892,403	
Dominion Government and other Securities at Local quotations	3,122,550		2,863,512	
		55,866,694		49,695,625
HONGKONG GOVERNMENT CERTIFICATES OF INDEBTEDNESS for surrendered coin lodged against Note Issue	1,179,278		1,323,028	
BRITISH GOVERNMENT SECURITIES at Market Value (Quoted on London Stock Exchange) lodged against Note Issue	1,767,500		1,776,250	
		2,946,778		3,099,278
BILLS OF EXCHANGE, including United Kingdom and Foreign Treasury Bills		14,244,427		4,016,186
ADVANCES TO CUSTOMERS AND OTHER ACCOUNTS		67,157,831		52,853,460
BALANCE OF REMITTANCES, DRAFTS, ETC., IN TRANSIT between Head Office, Branches and Agencies		5,569,513		1,832,013
LIABILITY OF CUSTOMERS FOR ACCEPTANCES, including undertakings to accept, per contra		13,757,502		11,420,469
		190,973,722		148,911,607
FIXED ASSETS—				
SUBSIDIARIES—Shareholdings at cost—				
Allahabad Bank Limited—37,648 Ordinary Shares of Rs. 100 each of which 14,665 are fully paid and 22,983 are paid up to the extent of Rs. 50 per share	747,705		747,705	
The Chartered Bank (Malaya) Trustee Limited— 30,000 Shares of Straits $10 each $5 paid	17,500		17,500	
Nominee Companies	381		381	
The net assets of the Nominee Companies amount to £381, represented by deposits with the Bank, per contra				
	765,586		765,586	
BANK PREMISES AND FURNITURE, at cost less amounts written off	1,842,707		1,822,626	
TRADE INVESTMENT, representing Property (at cost)	20,625		20,625	
		2,628,918		2,608,837
		£193,602,640		£151,520,444

W. R. COCKBURN, *Chief General Manager.*
H. F. MORFORD, *Deputy Chief General Manager.*
W. H. CARRICK, *Chief Accountant.*

V. A. GRANTHAM, *Chairman.*
J. L. MILNE, *Deputy Chairman.*
I. TAIT, *Director.*

REPORT OF THE AUDITORS TO THE STOCKHOLDERS.

We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit. In our opinion proper books of account have been kept by the bank so far as appears from our examination of those books, and proper returns adequate for the purposes of our audit have been received from the branches, which have not been visited by us. We have examined the annexed balance sheet and profit and loss account of The Chartered Bank of India, Australia & China, which are in agreement with the books of account and returns as aforesaid. In our opinion and to the best of our information and according to the explanations given to us the said accounts give the information required by the Companies Act, 1948, in the manner so required for banking companies, and, on the basis indicated in Note (4) on the balance sheet, such balance sheet gives a true and fair view of the state of the bank's affairs as at 31 December, 1950, and the profit and loss account gives a true and fair view of the profit for the year ended on that date. We have also examined the annexed accounts of the subsidiaries, Allahabad Bank Limited and The Chartered Bank (Malaya) Trustee Limited, which have not been audited by us. Subject thereto in our opinion such accounts have been properly prepared in accordance with the provisions of the Companies Act, 1948, so as, in conjunction with the accounts of the bank as audited by us (which include particulars regarding Nominee Companies), to give on the basis mentioned above a true and fair view of the state of affairs as at December 31, 1950, and of the profit for the year ended on that date of the bank and its subsidiaries so far as concerns stockholders of The Chartered Bank of India, Australia and China.

W. A. BROWNE & CO.
DELOITTE, PLENDER, GRIFFITHS & CO. } *Auditors.*
Chartered Accountants.

LONDON, March 7, 1951.

Profit and Loss Account for the year ended 31st December, 1950

	£	£	1949 £	£
ALLOCATIONS—				
Amount written off Bank Premises	200,000		200,000	
Officers' Pension Fund	125,000		100,000	
Widows' and Orphans' Fund	20,000		15,000	
Contingencies Account	100,000		—	
		445,000		315,000
DIVIDENDS PAID AND PROPOSED, less income tax—				
Interim 6% paid 29th September, 1950	99,000		99,000	
Final 8% proposed	132,000		99,000	
14%		231,000		198,000
BALANCE PROPOSED TO BE CARRIED FORWARD		365,836		409,029
		£1,041,836		£922,029

	£	£	1949 £	£
BALANCE BROUGHT FORWARD FROM 31ST DECEMBER, 1949		409,029		406,437
PROFIT, after providing for Taxation and after making allocations to Contingency Accounts, out of which Accounts full provision has been made for any diminution in value of assets		632,807		515,592
		£1,041,836		£922,029

Notes:—

(1) The aggregate emoluments received by the Directors for their services amounted to £16,250 (1949, £15,437).

(2) The nominee subsidiaries do not trade and their accounts show neither profit nor loss.

RAMBUTAN, LTD.

The Forty-Fifth Ordinary General Meeting of Rambutan, Limited was held on March 9, 1951 at the registered office, Redruth.

Mr. Stanley Wickett (Chairman) presided.

The Report and Accounts for the year ended June 30, 1950, having been circulated for the prescribed time, were taken as read, as was also the Chairman's Statement, circulated with the report and accounts, which was as follows:—

The Accounts for the financial year ended June 30, 1950, submitted herewith, show a gross profit of £23,552 after payment of Government Royalty to the Malayan Government of £6,473 in respect of Tin Ore sold during the year.

Provision for United Kingdom Taxation required £13,139.

The Shareholders received dividends amounting to £6,875, whereas provision for Malayan and British Taxation absorbed £19,612.

The Balance standing to the credit of Profit and Loss Account has been increased from £5,033 to £8,683, which the Directors propose to carry forward.

Quarterly returns for the current year have been:—

	Output of Tin ore
July-September, 1950	300 piculs = 18 tons.
October-December, 1950 ...	400 piculs = 23¾ tons.

The advance received from the Malayan Government stands at the figure of £12,560 while at the close of the accounts expenditure carried forward in suspense on Rehabilitation account amounted to £13,217, included in the Company's claim for War Damage. Assessment of the claim is expected shortly, but under the terms of an announcement made by the Malayan Government it appears that owing to limitation of funds compensation for damage suffered as the result of Japanese occupation will be drastically scaled down.

The International Commodity Conference for Tin which met at Geneva in the late autumn adjourned without reaching agreement. It was apparently felt that the various proposals made needed further consideration by the Governments concerned and the Chairman was instructed to keep developments under review and recall the Conference as and when necessary.

Our General Managers and Staff in the East have carried out their duties under very trying conditions, and I am sure the Shareholders would like to express their thanks to all for their devotion to duty under conditions of great anxiety.

The Statement of Accounts and Balance Sheet, together with the Directors' Report, were received and adopted.

ASHANTI GOLDFIELDS CORP., LTD.

NOTICE IS HEREBY GIVEN that the Board of Directors have to-day recommended a Final Dividend (No. 109) on the Issued Capital of the Corporation at the rate of 1s. 6d. per Unit of Stock, less Income Tax at 9s. in the £. This Dividend which is in respect of the year ended September 30, 1950, to be payable on and after May 24, 1951, to all Stockholders on the Registers on March 22, 1951.

THE TRANSFER BOOKS WILL BE CLOSED from the 23rd March, 1951 to the 31st March, 1951, both dates inclusive, for the preparation of Dividend Lists.

By Order of the Board,
E. W. MORGAN, Secretary.

Registered Address:
10, Old Jewry, London, E.C.2.
March 13, 1951.

BIBIANI (1927) LIMITED

NOTICE IS HEREBY GIVEN that the Board of Directors have to-day recommended a Final Dividend (No. 27) on the Issued Capital of the Company at the rate of 7.2d. per Unit of Stock, less Income Tax at 9s. in the £. This Dividend which is in respect of the year ended September 30, 1950, to be payable on and after May 24, 1951, to all Stockholders on the Registers on March 22, 1951.

THE TRANSFER BOOKS will be closed from the 23rd March, 1951 to the 31st March, 1951, both dates inclusive, for the preparation of Dividend Lists.

By Order of the Board,
E. W. MORGAN, Secretary.

Registered Address:
10, Old Jewry, London, E.C.2.
March 13, 1951.

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